

CPA

INTERMEDIATE LEVEL

MANAGEMENT ACCOUNTING

REVISION KIT

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APRIL 2024
Past Papers with Answers**

KASNEB SYLLABUS: MANAGEMENT ACCOUNTING

GENERAL OBJECTIVE

This paper is intended to equip the candidate with knowledge, skills and attitudes that will enable him/her to apply management accounting principles and concepts in business

LEARNING OUTCOMES

A candidate who passes this paper should be able to:

- Estimate the cost of goods and services
- Analyse product costs for manufacturing and non-manufacturing activities
- Prepare marginal and absorption cost statements
- Analyse an organisation's activities through budgetary control process
- Analyse variances for decision making

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TOPIC 1

THE CONTEXT OF MANAGEMENT ACCOUNTING

QUESTION 1

April 2024 Question Two A

Describe **THREE** roles of management accounting in an organisation. (6 marks)

ANSWER

Roles of management accounting in an organisation

- i) **Cost control:** Facilitates in cost control for the purpose of evaluating performance of activities of a firm and also that of individual employees.
- ii) **Budgeting:** Helps in preparation of budgets for resource allocation purposes
- iii) **Decision making:** Provides useful accounting information for making informed decision
- iv) **Communication:** Improves in the communication across departments and among individuals in the firm
- v) **Motivation:** Provides a basis for the motivation of employees in the company
- vi) **Accounting and Reporting:** Provides useful accounting information for the purposes of preparation of accounting records and important reports for management use

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QUESTION 2

April 2024 Question Three A

Management accounting is a discipline that communicates economic information to various parties known as “end-users”.

With reference to the above statement, outline **TWO** user information needs of the following end-users:

- (i) Executives. (2 marks)
- (ii) Production managers. (2 marks)
- (iii) Management accountants. (2 marks)

ANSWER

User information needs of the following end-users:

- (i) **Executives.**
 - To develop company policy and formulate corporate strategy for the company
 - To maintain effective control over activities of the company and also increase efficiency of the organization
 - To plan for capital needs of the company
- (ii) **Production managers.**
 - To plan for raw materials required to achieve the production needs of the company
 - To determine the optimal production mix to maximize profit

- To distinguish between profitable and non – profitable products and also manage wastages or losses.

(iii) Management accountants.

To facilitate in effective cost control

To prepare budget for the purpose of allocating resources

To report on performance of activities of the company

Making estimates and quoting tenders

QUESTION 3

August 2023 Question One A

Explain THREE limitations of financial accounting which are addressed by management accounting. (6 marks)

ANSWER

- **Profitability:** Financial accounting provides only limited information because it reveals the profitability of the company as a whole rather than in terms of its individual operations such as department or product.
- **Performance measures:** It considers only those transactions which can be expressed in terms of money or quantitatively expressed while it does not take into account qualitative information such as product quality, employee efficiency e.t.c

- **Decision making:** Provides limited information to management for decision making purposes. Nevertheless, the information provided sometimes is not relevant in the circumstance for making decisions.
- Its **historical in nature** and hence provides only a post mortem record of business transactions

QUESTION 4

December 2022 Question Five (b)

Highlight **SIX** benefits that a firm would derive from establishing a good cost accounting system. (6 marks)

ANSWER

- A cost system reveals unprofitable activities, losses or inefficiencies occurring in any form such as:
 - Wastage of man power, idle time and lost time.
 - Wastage of material in the form of spoilage, excessive scrap etc., and
 - Wastage of resources, e.g. inadequate utilization of plant, machinery and other facilities.
- Cost Accounting locates the exact causes for decrease or increase in the profit or loss of the business. It identifies the unprofitable products or product lines so that these may be eliminated or alternative measures may be taken.

- Cost Accounts furnish suitable data and information to the management to serve as guides in making decisions involving financial considerations.
- Cost Accounting is useful for price fixation purposes. Although sale price is generally related more to economic conditions prevailing in the market than to cost, the latter serves as a guide to test the adequacy of selling prices.
- With the application of Standard Costing and Budgetary Control methods, the optimum level of efficiency is set.
- Cost comparison helps in cost control. Comparison may be period to period, of the figures in respect of the same unit or factory or of several units in an industry by employing Uniform Costs and Inter- Firm Comparison methods. Comparison may be made in respect of cost of jobs, process or cost centres.
- A cost system provides ready figures for use by the Government, wage tribunals and boards, and labour and trade unions.
- When a concern is not working to full capacity due to various reasons such as shortage of demands or bottlenecks in production, the cost of idle capacity can readily worked out and reported to the management.
- Introduction of a cost reduction programme combined with operations research and value analysis techniques leads to economy.
- Marginal Costing is employed for suggesting courses of action to be taken. It is a useful tool for the management for making decisions.

- Determination of cost centres or responsibility centres to meet the needs of a Cost Accounting system, ensures that the organizational structure of the concern has been properly laid responsibility can be properly defined and fixed on individuals.
- Perpetual inventory system which includes a procedure for continuous stock taking is an essential feature of a cost system.
- The operation of a system of cost audit in the organization prevents manipulation and fraud and assists in furnishing correct and reliable cost data to the management as well as to outside parties like shareholders, the consumers and the Government.

QUESTION 5

August 2022 Question Five (a)

Describe four uses of management accounting information to a business entity.

(8 marks)

ANSWER

- **Storehouse of Reliable Data:** Management wants reliable data for Planning, Forecasting and Decision-making.

Management accounting collects the data from various sources and stores the information for appropriate use, as and when needed. Though the main source of data is financial statements, Management Accounting is not restricted to the use of monetary data only. While preparing a sales budget, the management accountant

uses the past data of the products sold from the financial records and makes projections based on the consumer surveys, population figures and other reliable information to estimate the sales budget. So, management accounting uses qualitative information, unlike financial accounting, for preparing its reports, collecting and modifying the data for the specific purpose.

- **Modification and Presentation of Data:** Data collected from financial statements and other sources is not readily understandable to the management. The data is modified and presented to the management in such a way that it is useful to the management. If sales data is required, it can be classified according to product, geographical area, season-wise, type of customers and time taken by them for making payments. Similarly, if production figures are needed, these can be classified according to product, quality, and time taken for manufacturing process. Management Accountant modifies the data according to the requirements of the management for each specific issue to be resolved.
- **Communication and Coordination:** Targets are communicated to the different departments for their achievement. Coordination among the different departments is essential for the success of the organisation.

The targets and performances of different departments are communicated to the concerned departments to increase the efficiency of the various sections, thereby increasing the profitability of the firm. Variance analysis is an important tool to bring the necessary matters to the attention of the concerned to exercise control and achieve the desired results.

- **Financial Analysis and Interpretation:** Management accounting helps in strategic decision making. Top managerial executives may lack technical knowledge. For example, there are various alternatives to produce.

There is always a choice for the sales mix. Management 344 Accounting for Managers Accountant gives facts and figures about various policies and evaluates them in monetary terms. He interprets the data and gives his opinion about various alternative courses of action so that it becomes easier to the management to take a decision.

- **Control:** It is absolutely essential that there should be a system of monitoring the performance of all divisions and departments so that deviations from the desired path are brought to light, without delay and are corrected then and there. This process is termed as control. The aim of this function 'control' is to facilitate accomplishment of the goals in an efficient manner. For the discharge of this important function, management accounting provides meaningful information in a systematic and effective manner. However, the role of accountant is misunderstood. Many consider the accountant as a controller of their performance.

Many accountants themselves misunderstand their own role as controllers. The real role of control is effective communication and assists the managers in achieving their goals, as efficiently as possible.

- **Supplying Information to Various Levels of Management:** Every level of management requires information for decision-making and policy execution. Top-level management takes broad policy decisions, leaving day-to-day decisions to

lower management for execution. Supply of right information, at proper time, increases efficiency at all levels.

- **Reporting to Management:** Reporting is an important function of management accounting to achieve the targets. The reports are presented in the form of graphs, diagrams and other statistical techniques so as to make them easily understandable. These reports may be monthly, quarterly, and half-yearly. These reports are helpful in

QUESTION 6

April 2022 Question One (a)

Cost accounting uses information provided by financial accounting together with other details of internal operations of an organisation.

With reference to the above statement, describe three similarities between cost accounting and financial accounting. (6 marks)

ANSWER

1. **Common Objective:** Both cost accounting and financial accounting aim to provide relevant and accurate information for decision-making within an organization. While cost accounting focuses on internal management and cost control, financial accounting primarily focuses on external reporting to stakeholders.

2. **Use of Generally Accepted Accounting Principles (GAAP):** Both cost accounting and financial accounting adhere to the principles and guidelines established by GAAP. GAAP ensures consistency and comparability of financial information, making it easier for stakeholders to analyze and interpret the data.
3. **Double-Entry System:** Both cost accounting and financial accounting use the double-entry system of recording financial transactions. This system ensures that every transaction affects at least two accounts, maintaining the fundamental principle of balance in accounting.
4. **Recording Transactions:** Both branches record financial transactions involving money, assets, liabilities, revenues, and expenses. They use journals and ledgers to record and classify these transactions.
5. **Importance of Accuracy:** Accuracy is crucial in both cost accounting and financial accounting. In both cases, the information generated must be reliable and precise to facilitate effective decision-making and financial reporting.
6. **Analysis and Interpretation:** Both cost accounting and financial accounting involve the analysis and interpretation of financial data. Cost accountants analyze costs and profitability at various levels, such as product, department, or process, while financial accountants analyze and interpret financial statements to assess the overall financial performance and position of an organization.
7. **Integration:** While cost accounting and financial accounting have distinct focuses, they are often interconnected. Cost accounting data is used as input for financial accounting to determine the cost of goods sold, inventory valuation, and

other financial statement components. The financial statements prepared by financial accounting, such as the income statement and balance sheet, can also provide valuable information for cost analysis and decision-making.

QUESTION 7

April 2022 Question Three (a)

Discuss four challenges that you are likely to encounter when installing a costing management system. (8 marks)

ANSWER

- **Lack of Support from Top Management:** Effective functioning of nay system requires wholehearted support from the management. Otherwise the system will fail or may not produce the desired results. Management has all responsibility to receive the reports and feed backs and take necessary actions on the reports. When management lacks interest in the system [i.e., may accept the system but may not encourage], the system will fail miserably.
- **Lack of Cooperation from the Staff:** The tendency of the staff is to resist any new system at the beginning and may not extend full cooperation for the system to function effectively. If the tendency continues further and refuse to cooperate then problems may arise.

- **Different Authority Structure:** The costing system may be based on formal authority structure, but in reality there may exist a different authority structure. For example, if trade unions have greater influence in the decision-making process, then the system may run into difficulties.
- **Changing Environment:** Changing environment has greater influence on business operations. The market may change, the production process may change and the management ideas may change. If the costing system fails to take account of the changes, then the system will fail to deliver the desired results and may run into difficulties.
- **Lack of Overall Control on the System:** The system should be watched continuously. When some part of the system breaks down, it should be set right then and there. Otherwise the whole system will break down. For example, if inventory is not properly controlled, then the whole material control system may break down. Ultimately the whole cost accounting system may fail.
- **Lack of Clarity on Objectives:** The cost accounting department staff should be clear about the priorities and objectives of the system. They should know the purpose of information collected and its end use. If not, they may not collect correct information or may send wrong or inadequate information.

QUESTION 8

December 2021 Question Five (a)

Describe four factors that could influence a company's demand for management accounting information. (8 marks)

ANSWER

1. **Organizational Size and Complexity:** Larger and more complex organizations typically have a greater demand for management accounting information. This is because they have more departments, processes, and activities to monitor and manage. The need for detailed cost information, performance measurement, and analysis becomes crucial in such organizations.
2. **Nature of the Industry:** The industry in which a company operates can significantly impact the demand for management accounting information. Industries with intense competition, rapidly changing technology, or high market volatility often require more frequent and detailed information for decision-making. For example, a company operating in the technology sector may need real-time cost data to assess the profitability of its products and make timely pricing decisions.
3. **Business Strategy and Objectives:** The strategic direction and goals of a company can influence the demand for management accounting information. For instance, if a company aims to differentiate itself through cost leadership, it will require detailed cost analysis to identify areas for cost reduction and efficiency improvement. On the other hand, a company pursuing a product differentiation strategy may focus more on customer profitability analysis and investment appraisal for new product development.

4. **Decision-Making Structure:** The decision-making structure and hierarchy within a company can affect the demand for management accounting information. In decentralized organizations, where decision-making authority is distributed across various levels or departments, there is a greater need for relevant and timely information at each level to support decision-making. On the other hand, centralized decision-making structures may require less detailed information at lower levels.
5. **Regulatory and Compliance Requirements:** Regulatory and compliance requirements imposed by government authorities or industry standards can influence the demand for management accounting information. Companies need to generate and provide specific financial and non-financial information to comply with regulations, such as tax reporting, environmental reporting, or industry-specific standards like International Financial Reporting Standards (IFRS) or Generally Accepted Accounting Principles (GAAP).
6. **External Stakeholder Needs:** The demands and expectations of external stakeholders, such as investors, lenders, and shareholders, can influence the demand for management accounting information. If stakeholders require detailed information on cost structures, profitability analysis, or risk assessment, the company may need to provide such information to satisfy their needs and maintain transparency.
7. **Internal Decision-Making Needs:** The specific decision-making needs within a company can determine the demand for management accounting information.

Different departments or managers may require information related to budgeting, forecasting, performance evaluation, pricing decisions, product profitability, or capital investment analysis. The level of detail and frequency of reporting will depend on the specific decision-making requirements of different stakeholders within the organization.

QUESTION 9

September 2021 Question Two A

Examine four limitations of financial accounting that have made organisations introduce management accounting. (8 marks)

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ANSWER

- **It shows only Overall Performance** – Financial Accounting provides information about profit, loss, cost etc., of the collective activities of the business as a whole. It does not provide data for each and every product, process, department or operation separately.
- **It provides only Historical Data** – Financial Accounting is historical in nature and it provides data of past activities. It does not provide current data which management requires for making effective plans for future. So it is rightly said that financial accounts provide only a post-mortem analysis of past activities. It does not help in fixation of selling price.

- **It is Static in Nature** – Modern business is dynamic and not static. Financial Accounts does not incorporate the changes that take place within the business.
- **It fails to provide information for Price Fixation** – In Financial Accounting; costs are not available by division, products, process etc. So, price fixation becomes difficult and estimates cannot be prepared.
- **It fails to Control Cost** – Financial Accounts fail to exercise control over materials, labour and other expenses incurred in a business enterprise. As a result, avoidable wastages and losses remain as it is under this system.
- **No proper Classification of Costs** – In Financial Accounting, expenses are not classified into direct and indirect, fixed and variable and controllable and uncontrollable. These classifications have utility of their own.
- **It does not provide proper System for Performance Appraisal** – In Financial Accounting there is no system of developing norms and standards to appraise the efficiency in the use of materials, labour and other costs by comparing the actual performance with what should have been accomplished during a given period of time.
- **It fails to Analyse Losses** – Financial Accounting does not fully analyse the losses due to idle time, idle plant capacities, inefficient labour, sub-standard materials etc.

QUESTION 10

September 2021 Question Four A

Evaluate three benefits that would accrue to an organisation that has a cost accounting department (6 marks)

ANSWER

Benefits that would accrue to an organisation that has a cost accounting department

- Evaluates the reasons for losses
- Control over stock
- Price Reduction
- Fixing Prices
- Identification of Unprofitable Activities
- Measuring and Improving Efficiency
- Aid Future Planning

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QUESTION 11

May 2021 Question Five A

Jeremy Awuor established a fast food business one year ago and has achieved good sales but a small profit. In a recent business networking event, he was advised to consider employing a management accountant to enhance and improve his business.

Required:

Explain to Jeremy Awuor six changes in the business environment that could have contributed to the growth and importance of management accounting in the recent past.

(6 marks)

- (i) Describe four roles played by a management accountant that would enhance and improve Jeremy Awuor's business. (4 marks)

ANSWER

- Technology – business entity always look for ways to leverage technology. Any type of technology that can increase production, reduce cost.
- Lean practices – a lean business model is one which an organization strives to eliminate wastes to its products, services and processes, while still fulfilling company's mission.
- Total quality management – in TQM management and employees reveal waste and errors, streamline the supply chain, improve customer relation and confirm that employees are informed and properly trained.
- Just in time manufacturing – this system increase efficiency and decrease waste by receiving goods only as they are needed within the production process.
- Lean six stigmas – is quality control program that depend on a combined effort of many team members to enhance performance by analytically removing waste.
- Kaizen – is a process improvement by eliminating waste and increasing efficiencies.

QUESTION 12

November 2020 Question Three A

Describe four limitations of management accounting in an organisation. (4 marks)

ANSWER

Limitations of management accounting in an organization

1. **Evolutionary stage:** management accounting is still in a development stage and has not yet reached a final stage. The techniques and tools used by this system give varying and differing results. It is still named as internal accounting and / or operational accounting.
2. **Lack of knowledge:** the use of management accounting requires the knowledge of number of related subjects. Deficiency in knowledge in related subjects like accounting principles, statistics, economics and principle of management e.t.c will limit the use of management accounting
3. **Based on accounting information:** Management accounting is based on data and information provided by financial accounting and cost accounting. As such, the correctness and effectiveness of managerial decisions will depend upon the quality of data provided by cost and financial accounts so effectiveness limited to the reliability of sources of information.
4. **Psychological resistance:** Changes in traditional accounting practices and organization set up are required to install management accounting system. It calls for a rearrangement of the personnel and their activities and framing of new rules and regulations which generally may not be liked by the people involved
5. **Unquantifiable variables:** Management accounting seeks to interpret and evaluate an objective historical event on record in terms of money. But, in

practice, the business organization is facing many problems which cannot be quantified.

6. **Costly installation:** The cost of installation of management accounting system is very high. Hence, a small business organization cannot bear the cost of such installation. Moreover, the utility of this system is restricted only to big and complex organizations
7. **Broad based scope:** The scope of management accounting is very wide since it considers both monetary and non-monetary transactions of the business organization. The limited knowledge and experience of the management accountant can lead to prepare data unreliable and undependable.
8. **Continuity and participation:** The decisions are taken by the management. The implementation is vested in the hands of management accountants. The continuous efforts of management accountant and full participation of all levels of management are necessary for successful operation of management accounting system.
9. **Lack of objectivity:** There is every possibility of personal bias and manipulation from the collection of data to the interpretation stage in financial accounting.

Thus, it losses objectivity and validity

QUESTION 13

May 2019 Question One A

Financial accounting is the branch of accounting that organises accounting information for presentation to interested parties outside the business.

Management accounting on the other hand uses information provided by both financial accounting and cost accounting with the purpose of providing information to managers for policy formulation, planning and decision making.

Required:

With regard to the above statement, describe four differences between management accounting and financial accounting. (8 marks)

ANSWER

Difference between management accounting and financial accounting

- Financial accounting is developed for definite period, usually a year, half year or quarter but management accounting reports and statements can be prepared whenever needed
- Financial accounting follows the double entry system of recording classifying and summarizing businesses transactions. The data under management accounting can be gathered for small or large segments or activities of an organization and monetary as well as other measures can be used for different activities in the organization.
- Limited liability companies must by law prepare financial accounts. There is no legal requirement to prepare management accounts.

- The format of published financial accounts is determined by local law, by international financial reporting standards.
- In principle the accounts of different organizations can therefore be easily compared, the format of management accounts is entirely at management discretion, no strict rules govern the way they are prepared or presented. Each organization can device its own management accounting system and format or reports.
- Financial accounts concentrate on the business as a whole, aggregating revenues and costs from different operations and are end in themselves. Management accounts can focus on specific areas of an organizations activities. Information may be produced to aid a decision rather than to be an end product of a decision.
- Most financial accounting information is of a monetary nature, management accounts incorporate non-monetary measures. Management may need to know for example, tons of aluminum produced, monthly machine hours or miles travelled by salesmen.
- Financial accounts present an essentially historic picture of past operations. Management accounts are both an historical record and a future planning tool.
- Financial accounts are for external reporting purposes. Management accounts are for internal reporting purposes.

QUESTION 14

May 2018 Question One A

Describe four limitations of management accounting.

(4 marks)

ANSWER

Limitations of managements accounting

- **Unquantifiable variables:** Management accounting seeks to interpret and evaluate an objective historical event on record in terms of money. But, in practice, the firm is facing many problems which cannot be exposed.
- **Evolutionary state:** Management accounting is a recent development discipline. The utility of management accounting is dependent upon the intelligent interpretation of the data available for managerial use. Hence, it is pre mused that the management accounting stands in evolutionary stage.
- **Resistance to change:** The installation of management accounting system brings some changes in the organizational set up and accounting practice. The personnel concerned may resist such changes unless they are getting confidence.
- **Costly installation:** Installation cost is very high. Hence a small firm cannot bear the cost of such an installation. Moreover, the utility of this system is restricted to big and complex firms.
- **Personal Bias:** The analysis and interpretation of financial statement are full dependent on the capability of the analyst and interpreter. Hence, personal prejudices and bias of individual can affect the objectivity and effectiveness of the conclusions and recommendations.

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- **Broad based scope:** The scope of management accounting is very wide since it considers both monetary and non-monetary transactions of the business organization. The limited knowledge and experience of the management accountant can lead to prepare data that is unreliable and undependable.
- **Continuity and participation:** The decisions are taken by the management. Their implementation is vested in the hands of management accountant. The continuous efforts of management accountant and full participation of all levels of management are necessary for successful operation of management accounting system.
- **Management accounting is only a tool:** The management accountant is using the management accounting system as a tool to give advice and facilitate the management for decision making. The actual decisions, their implementation and follow up action are the prerogative of the management.

QUESTION 15

November 2017 Question One A

Explain four purposes of cost accounting.

(8 marks)

ANSWER

Purpose of cost accounting

1. **Performance evaluation:** Cost accounting information is used to measure and evaluate actual performance so as to make a decision of the degree of optimality or efficiency of resource utilization.
2. **Resource allocation decisions:** For example, product pricing in determining whether to accept or reject jobs. This is based on cost and revenue implications of the relevant decisions.
3. **Decision making:** Cost accounting information assists in the making of decisions about future operations of the enterprise, such decisions making may be assisted by the comparison of actual cost information with that included in the plan. Any variance between planned and actual events can be investigated and corrective action implemented as appropriate.
4. **Accounting for costs:** This may be seen as a record keeping or score keeping role. Information must be gathered and analysed in a manner which help in planning, controlling and decision making:
5. **Planning:** This is the process of setting objectives and then determining the steps needed to achieve them. Budgeting is the contribution of cost accounting in the planning process.

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QUESTION 16

November 2016 Question One A

Describe six skills that a management accountant should possess

(6 marks)

ANSWER

Skills that management accountant should posses

- An analytical mind which could see through implications of alternate courses.
- Ability to get along with all levels of management. The reports prepared and submitted must be free from bias of any type.
- Thorough knowledge about budgeting and forecasting so as to consider alternate proposals under consideration
- Knowledge about sources of funds so that the best source could be tapped at minimum borrowing cost
- Knowledge of various management techniques and accounting techniques so that he could
- Be tapped at minimum borrowing cost
- Knowledge of various management techniques and accounting techniques so that he could prepare and submit reports to enable management to take prompt action to set right adverse conditions.
- Knowledge of business forecast under anticipated changing environment of business.
- Ability to appraise management from time to time regarding the current position of business so that the management could review the success or future of the business.

- Knowledge about various branches of study such as financial accounting, cost accounting and economics among others as management accounting embraces all these fields of study.

QUESTION 17

November 2015 Question One A

Describe three benefits of management accounting. (6 marks)

ANSWER

Benefits of Management accounting

1. **Performance evaluation:** Management accounting information is used to measure and evaluate actual performance so as to make a decision of the degree of optimality or efficiency of resource utilization.
2. **Resource allocation decisions:** For example product pricing in determining whether to accept or rejects jobs. This is based on cost and revenue implications of the relevant decisions.
3. **Decision making:** Management accounting information assists in the making of decisions about future operations of the enterprise, such decisions making may be assisted by the comparison of actual cost information with that included in the plan. Any variance between planned and actual events can be investigated and corrective action implemented as appropriate.

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4. **Accounting for costs:** This may be seen as a record keeping or score keeping role.

Information must be gathered and analysed in a manner which help in planning, controlling and decision making:

5. **Planning:** This is the process of setting objectives and then determining the steps needed to achieve them. Budgeting is the contribution of cost accounting in the planning process.

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TOPIC 2

COSTING TERMS AND CONCEPTS

QUESTION 1

April 2024 Question One A

Cost classification is essential for easier cost ascertainment and cost control.

With reference to the above statement, explain the following bases of cost classification

citing one example in each case:

- | | |
|--------------------|-----------|
| (i) By time. | (2 marks) |
| (ii) By behaviour. | (2 marks) |
| (iii) By function. | (2 marks) |
| (iv) By nature. | (2 marks) |

ANSWER

Cost classification citing an example in each case:

(i) By time.

Cost is classified as historical or predetermined cost historical cost for example is installation cost while predetermined cost include replacement cost of old equipment

(ii) By behaviour.

Cost behavior means how costs will respond or react to changes in the activity level. i.e. as we increase output or sales, are the costs rising, dropping or remaining the same.

Cost is classified either as:

- Fixed cost e.g rent
- Variable cost e.g direct labour
- Semi – variable or semi – fixed i.e mixed cost e.g electricity cost

(iii) By function.

Cost is classified based on the functions area activities of the firm such as:

Administration costs e.g office rent

Production costs e.g material costs e.t.c

(iv) By nature

Cost is classified based on the element of manufacturing as:

- Material cost e.g cost of timber
- Labour costs e.g salaries to production workers
- Manufacturing overheads e.g factory rent

QUESTION 2

December 2023 Question Five A

Major policy decisions in business are based on cost factor and it is important to distinguish between controllable and non-controllable costs in decision making.

However, the classification of cost as controllable and non-controllable depends on the point of reference.

Required:

- (i) With reference to the above statement, explain **TWO** possible uses of cost information to the management. (2 marks)
- (ii) By distinguishing between “controllable costs” and “non-controllable costs”, discuss how the classification of cost as controllable and non-controllable depends on a point of reference. (4 marks)

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ANSWER

- (i) **Possible uses of cost information to the management.**
 - Used in the preparation of budgets which serves the purpose of resource allocations
 - Used by managers in preparing accounting records and statements for reporting activities of the company

- Facilitates in cost control so as to achieve the organisation goals and objectives of improving profitability and maximizing profit
- Used in the preparation of plans and other forecasts for planning of the activities of the company
- Providing relevant cost information for decision making purposes
- For the purpose of setting prices for the organisation products

(ii) Distinction between “controllable costs” and “non-controllable costs”,

Controllable costs and non – controllable costs can be distinguished with reference to whether or not they can be influenced by the decision making actions of the managers. In this case, controllable costs are those that can be influenced by the decision - making actions of the managers and therefore are relevant for decision making. On the other hand, non – controllable costs can not be influenced by the decision making actions of the managers because they are usually fixed in nature and hence irrelevant for decision making.

QUESTION 3

August 2023 Question One B

Distinguish between a “cost centre” and a “profit centre” as used in responsibility accounting.

(4 marks)

ANSWER

Cost centre

- Accountable for costs only
- Has simple structure

Profit centre

- Accountable for both revenues and costs
- Has more complex structure as compared to cost centre

QUESTION 4

August 2023 Question Five A

The analysis of total cost into its behavioural elements is essential for effective cost and management accounting.

With reference to the above statement, enumerate **FOUR** cost behaviour patterns.

(4 marks)

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ANSWER

- **Variable costs:** Those that vary i.e get affected with the changes in the level of activity
- **Fixed costs:** Costs that remain constant i.e not affected by the changes in the level of activity
- **Mixed costs:** Those that are partly fixed and partly variable
- **Step costs:** Costs that remain constant for a given level of activity after which they vary as the level of activity changes

QUESTION 5

April 2023 Question One A

Explain THREE benefits of maintaining a cost database. (6 marks)

ANSWER

- **Cost control:** Allows management to monitor the operation costs of the firm thereby improving performance in production as well as service delivery.
- **Decision making:** Provides real time information that enables management to make informed decisions such as abandoning non-value adding activities.
- **Record keeping:** Reduces paperwork and extensive manual filing systems.
- **Time saving:** Database management tools provide easy access to all relevant information and also facilitate in faster sharing of such information among users, thus reducing the amount of time spent even in training of users.
- **Centralized storage of information:** Stores all data and information in one location resulting in significant cost savings.

QUESTION 6

December 2022 Question Two (a)

Explain the meaning of the following types of inventory costs:

- (i) Out of pocket costs. (2 marks)
- (ii) Set-up costs. (2 marks)
- (iii) Opportunity costs. (2 marks)

ANSWER

- (i) **Out of pocket costs** - Are direct cash payments made to third parties which may or may not be reimbursed e.g packing fees.
- (ii) **Set up costs** - Costs incurred in order to make the production equipment and machinery ready for production.
- (iii) **Opportunity cost** - Costs of selecting one course of action and the losing of other benefits to carry out that course of action.

QUESTION 7

April 2022 Question One (b)

Rengo ltd. has provided the following data for the financial year 2022:

1. Budgeted output for the year 9,800 units
2. Standard details for one unit:
 - Direct materials 40 square metres at Sh.530 per square metre.
 - Direct labour costs:
 - Bonding cost centre 48 hours at Sh.250 per hour
 - Finishing cost centre 30 hours at Sh.190 per hour
3. Budgeted costs and hours per annum:

• Variable overhead:	Hours	Sh.
Bonding cost centre	500,000	3,750,000
Finishing cost centre	300,000	1,500,000

 - Fixed overhead:

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Production	39,200,000
Selling and distribution	19,600,000
Administration	9,800,000

Required:

Prepare a standard cost statement of a unit cost showing:

- (i) Prime cost. (2 marks)
- (ii) Variable production cost. (2 marks)
- (iii) Total cost. (2 marks)
- (iv) Selling price per unit at a notion profit of 15% on cost. (2 marks)

ANSWER

(i) Prime cost.

Direct material $40 \times 530 = 21,200$

Direct labour cost

Bonding cost center $48 \times 250 = 12,000$

Finishing cost center $30 \times 190 = \underline{5,700}$

Prime cost Sh. 38,900

(ii) Variable production cost.

VOAR bonding center $\frac{3,750,000}{500,000} = Sh. 7.50$

$$\text{VOAR finishing cost center} \quad \frac{1,500,000}{300,000} = \text{Ksh } 5$$

Variable production cost

$$\text{Bonding cost center} \quad 7.5 \times 48 = 360$$

$$\text{Finishing cost center} \quad 5 \times 30 = \underline{150}$$

Sh. 510

(iii) Total cost.

Fixed overhead cost per unit

$$\text{Production} \quad \frac{39,200,000}{9,800} = \text{Sh. } 4,000$$

$$\text{Selling and distribution} \quad \frac{19,600,000}{9,800} \text{ Sh. } 2,000$$

$$\text{Administration} \quad \frac{9,800,000}{9,800} \text{ Sh. } 1,000$$

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(iv) Selling price per unit at a notion profit of 15% on cost.

$$\text{Direct material} \quad 21,200$$

$$\text{Direct labour} \quad \underline{17,700}$$

$$\text{Prime cost} \quad 38,900$$

$$\text{Variable production overheads} \quad 510$$

$$\text{Fixed production overheads} \quad 4,000$$

$$\text{Fixed selling and distribution overheads} \quad 2,000$$

$$\text{Fixed administration overheads} \quad \underline{1,000}$$

Total cost	<u>46,410</u>
Notional profit	<u>6,961.50</u>
Selling price per unit	<u>53,371.50</u>

QUESTION 8

December 2021 Question Five (d)

Explain the following terms:

- a. Relevant cost. (2 marks)
- b. Sunk cost. (2 marks)

ANSWER

Relevant cost, also called differential cost, is a management accounting term describing costs that pertain to a particular decision. Relevant costs will vary based on the context of the decision.

Sunk costs (past costs) or committed costs

Sunk, or past, costs are monies already spent or money that is already contracted to be spent. A decision on whether or not a new endeavour is started will have no effect on this cash flow, so sunk costs cannot be relevant.

For example, money that has been spent on market research for a new product or planning a new factory is already spent and isn't coming back to the company, irrespective of whether the product is approved for manufacture or the factory is built.

QUESTION 9

September 2021 Question One A

Identify and explain four types of costs that are irrelevant for decision making. (8 marks)

ANSWER

Types of costs that are irrelevant for decision making.

- **Sunk costs** – These are costs incurred in the past and cannot be affected by a future decision e.g development cost
- **General fixed overheads** – These are costs absorbed by using predetermined overhead rates
- **Committed costs** – The costs that are agreed to be paid as a result of past decisions e.g rent
- **Imputed cost** – The cost used in product evaluation, decision making or performance evaluation to represent the cost of using resources which has no actual cost

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QUESTION 10

May 2021 Question One A

Explain the following terms as used in management accounting:

- (i) Opportunity cost. (1 mark)

- (ii) Notional cost. (1 mark)
- (iii) Discretionary cost. (1 mark)
- (iv) Incremental cost. (1 mark)

ANSWER

- i) **Opportunity cost** – is the cost of the next best foregone alternative or the potential benefit that is lost by taking one course of action and giving up the other.
- ii) **National cost** – is an expense not measured directly but actually borne.
- iii) **Discretionary cost** – this are cost that an entity most incur to operate e.g.: advertising, repairs and maintenance.
- iv) **Incremental cost** - this are cost that differ among alternatives.

QUESTION 11

November 2020 Question Five A

In the context of costs classification, explain three types of costs based on behaviour.

(6 marks)

ANSWER

Classification of cost based on cost behaviour

1. **Fixed Cost:** Fixed cost is the cost which does not vary with the change in the volume of activity in the short run. These costs are not affected by temporary

fluctuation in activity of an enterprise. These are also known as period costs.

Example: Rent, Depreciation...etc.

2. **Variable Cost:** Variable cost is the cost of elements which tends to directly vary with the volume of activity. Variable cost has two parts (i) Variable direct cost (ii) Variable indirect costs. Variable indirect costs are termed as variable overheads.

Example: Direct labour, Outward Freight...etc.

3. **Semi-Variable Costs:** Semi variable costs contain both fixed and variable elements. They are partly affected by fluctuation in the level of activity. These are partly fixed and partly variable costs and vice versa. Example: Factory supervision, Maintenance...etc.

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QUESTION 12

November 2019 Question One A

Examine three challenges that young medium-sized organisations might face when introducing cost accounting system into their operations. (6 marks)

ANSWER

Challenges that medium sized organizations might face when introducing cost accounting system

1. Lack of support from top management effective functioning system requires whole hearted support from the management otherwise the system will fail or may not provide the desired route
2. Lack of cooperation from the staff – the tendency of the staff is to resist any new system at the beginning and may not extend your cooperation for the system no junction effectively.
3. Changing environment – the market may change, the production process may change and the management ideas may change
4. Lack of overall control on the system – the system should be watched continuously. When some part of the system breaks down. It should be set right then and there otherwise the whole system will break down.

QUESTION 13

November 2019 Question Three A

Explain the meaning of the following terms as used in cost estimation:

- | | |
|----------------------|-----------|
| (i) Cost allocation. | (2 marks) |
| (ii) Cost centre. | (2 marks) |
| (iii) Cost driver. | (2 marks) |
| (iv) Cost pool. | (2 marks) |

ANSWER

Meaning of the following terms

- i. **Cost allocation** – it is changing of cost to cost centres which result from the existence of such cost centres
- ii. **Cost centre** – is a responsibility centre where a manager is accountable only for costs which are under his control
- iii. **Cost driver** – is any activity / service of activities which take place within an organization and which causes cost to be incurred
- iv. **Cost pool** – is a collection of costs which may be charged to products by the use of a common cost drivers

QUESTION 14

May 2019 Question Four A

Highlight four purposes of costs classification in an organisation.

(4 marks)

ANSWER

Purpose of cost classification

Cost classification is the process of grouping costs according to their common characteristics. It serves the following purposes

- Preparation of budget
- Expansion of the organization
- Controlling cost
- Helps in measuring efficiency

QUESTION 15

May 2018 Question One C

Louise Njambi has taken a lease on a stall from the county government at a down payment of Sh.50,000. The annual rental payment amounts to Sh.50,000. If the lease is cancelled, the initial payment of Sh.50,000 is forfeited. Louise plans to use the stall in selling women's clothes and the estimated operation costs for the next 12 months are as follows:

	Sh.	Sh.
Sales		1,150,000
Value added tax (VAT)		(150,000)
Net sales		1,000,000
Cost of goods sold	500,000	
Wages and casual labour	120,000	
Rent including the down payment	100,000	
Rates, heating, lighting and insurance	130,000	
General expenses	20,000	(870,000)
Net profit		130 000

Additional information:

1. No provision has been made for Louise Njambi's salary but it is estimated that half of her time will be devoted to the business.
2. She has an option of subletting the stall to a friend at a monthly rent of Sh.5,500 if she does not use the stall herself.

Required:

- (i) Explain using relevant examples from the situation depicted above; sunk costs and opportunity costs. (4 marks)
- (ii) Using a cost analysis statement, advise Louise Njambi on whether to use the stall herself or sublet it. (6 marks)

ANSWER

i) Explanation of sunk costs and opportunity costs

Sunk costs (historical costs) are costs that have been incurred and thus irrelevant in decision making e.g down payment of sh. 50,000 **Opportunity cost** is the benefit sacrifice when a certain course of action is preferred or taken over the next best alternative e.g. subletting rental income of sh. 5,500 monthly and net profit of sh. 130,000

ii) Advice on whether to use the stall or to sublet

	Sh.	Sh.
Net sales		1,000,000
<i>Less: relevant costs</i>		
Costs of sales	500,000	
Wages and casual labour	120,000	
Relevant rent	50,000	
Rates, heating, insurance & lighting	130,000	
General expenses	<u>20,000</u>	<u>(820,000)</u>
Net profit		180,000
<i>Less: opportunity cost</i>	<u>(5,500×12)</u>	<u>(66,000)</u>

Net benefit

114,000

Advice: louse Njambi should use the stall herself as she will end up with a net savings of sh. 114,000.

QUESTION 16

May 2018 Question Two A

Classification of cost based on function involves classifying costs on the basis of the purpose for which costs are incurred.

With reference to the above statement, explain three types of costs classified by function. (6 marks)

ANSWER

Functional costs classification

- **Production costs:** All the costs relating to the production of goods or services whether direct or indirect e.g. direct material: direct wages: quality control costs and store expenses.
- **Administration costs:** These costs are incurred in connection with general management of the business e.g. postage; audit fees and directors remuneration.
- **Selling and distribution costs:** Selling costs includes all kinds of expenses incurred for achieving sales of products and services e.g. salaries of selling staff,

commission, discount, conveyance, product market research and royalty.

Distribution costs include all kinds of expenses that are incurred for distributing the products from its point of production to its customers e.g. transportation costs, warehouse rents and commission to distribution channel.

QUESTION 17

November 2017 Question Four A

In the context of management accounting, distinguish between “discrete costs” and “imputed costs”. (4 marks)

ANSWER

Distinction between “discrete costs” and “imputed costs”

Discrete costs: are costs that management has a choice to incur or not to incur them e.g. capital expenditure on plant and machinery

Imputed costs: Imaginary costs which to say the least are not expenses in the strict sense of the word because there are no financial obligations to pay any money for example transport charges on motor

QUESTION 18

May 2017 Question One A

Explain four challenges that could be encountered when installing a cost accounting system. (4 marks)

ANSWER

Challenges encountered when installing a cost accounting system.

- **Heavy expenses** in installing and maintaining the system: the setting of a separate costing department with staff often poses a problem in addition to installation, the operating expenses in the form of printing and stationery, heating and lighting, depreciation and insurance, rent and rates are to be incurred.
- **Lack of support from management.** Wherever costing system is installed. It is essential to seek the support of various departmental managers. very of them the managers show hostile attitude towards the costing system. They feel this system will interfere in their routine work and probably as a means if checking their efficiency. Under such scenarios it is better to convince them about the utility of costing system for the business as a whole.
- **Non-co-operation from middle and bottom level management:** at times the middle and bottom level managers such as foremen, supervisors and inspectors also fail to extend their whole hearted co-operation fearing additional work which may be entrusted to them.

- **Lack of trained staff:** it is somewhat difficult to get competent and experienced staff at the time of installation. There is need to pay attractive salaries to cost accountants to overcome this.
- **Resistance of existing accounting staff:** very often the existing accounting staff resists the installation of the cost accounting system on two grounds firstly; they feel that the new system of accounting might lead to excess work. Secondly, they are afraid of their job security. But this difficulty may be overcome by encouraging them about the usefulness of cost accounting as a supplement of financial accounts and the generation of more employment opportunities from the installation of cost accounting system.

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QUESTION 19

May 2017 Question Five A

Examine four purposes of cost classification.

(4 marks)

ANSWER

1. Profit Planning:

The Primary objective of doing any business is to earn profits. Hence, it is very important to make profit planning. Profit planning is concerned with taking a series of decisions and selecting amongst the various alternatives available. Thus, it is very important to study the behaviour of costs and profits in relation to change in the volume of output.

2. Effective Cost Control:

Profits can also be increased through effective cost control and cost reduction.

Classification of costs into fixed and variable elements helps management to control costs effectively as fixed costs are incurred by management decisions and can be controlled only by the top management. Further, variable costs may be controlled even at the lower levels of management.

3. Fixation of Selling Prices:

Profits could be maximised either by reduction and control over costs or by increasing the sales value through increase in sales volume or prices. Fixation of proper selling prices is thus very important for the management.

The segregation of costs into fixed and variable elements enables the management to adopt the most appropriate selling price policy as sometimes one may have to sell even below total cost. However, the selling prices should not be below the variable cost.

4. Marginal Costing and Break-Even Analysis:

The basic assumption of marginal costing, breakeven analysis and cost-volume profit analysis is that all elements of cost can be segregated into fixed and variable. Hence, for the use of marginal costing and break-even techniques, the classification of costs as fixed and variable is very essential.

5. Budgetary Control:

For the preparation of flexible budgets and effective budgetary control, this classification is a pre-requisite. The flexible budget is designed to change in

accordance with the level of activity and hence the cost behaviour is very important.

6. Proper Absorption of Overheads:

The analytical study of the behaviour of costs also helps in the proper absorption of overheads as the method to be adopted for the absorption depends upon the nature of overhead.

7. Helpful in Decision-Making:

The classifications of cost into fixed and variable elements helps management in taking many decisions such as make or buy decisions, selection of a proper product mix, capacity decision, operate or close down decisions, etc. Thus, this classification is very essential for not only ascertainment of cost but also for profit planning, cost control and decision-making.

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QUESTION 20

November 2015 Question Three A

Explain three purposes of cost classification by behaviour. (6 marks)

ANSWER

Purpose of cost classification by behavior.

- **Flexible budgeting:** a flexible budget takes into account changes in costs with the changes in activity levels. Flexible budgets cannot be prepared unless the impact of fluctuating activities on variable costs and fixed costs are shown separately.

- **Cost volume profit analysis:** separation of costs into fixed costs and variable costs is important for cost- volume profit analysis and break even analysis.
- **Cost control:** the importance of separating variable from fixed costs stems from the different behavior patterns of each, which have a significant bearing on their control. Variable costs are controlled in relation to level of activity while fixed costs must be controlled in relation to time.
- **Marginal costing:** the marginal costing technique is based on separate treatment of fixed and variable costs for this purpose all costs should be segregated into fixed costs and variable costs
- **Decision making:** From decision making point of view it is important to know whether or not a particular cost will vary as a result of a given decision.

QUESTION 21

Pilot paper 2015 Question Three B

Distinguish between "cost centre", "profit centre" and "investment centre". (6 marks)

ANSWER

Distinguish between cost centre, profit centre, investments centre.

- **Cost centre-** it's a segment within an organization in which the managers in that segment are held responsible in the cost incurred in that segment

- **Profit centre** – it is a segment within an organization when managers are responsible for both revenue and cost
- **Investment centre** – they are segments or sections, where managers are responsible for control of costs, revenue and investment employed

TOPIC 3

INTRODUCTION TO COST ESTIMATION

QUESTION 1

April 2024 Question One B

OJ Ltd. manufactures and sells mobile phones. The company's budgeted statement of profit or loss for the month of May 2024 is as follows:

	Sh.	Sh.
Sales (1,200 units at Sh.18,000 per unit)		21,600,000
Less: Cost of sales:		
Production (1,800 units at Sh.10,000 per unit)	18,000,000	
Less: Closing inventory (600 units at Sh.10,000 per unit)	<u>(6,000,000)</u>	<u>(12,000,000)</u>
Gross profit		9,600,000
Less: Variable selling expenses (10% of sales)		<u>(2,160,000)</u>
Fixed selling and distribution costs		<u>(1,705,000)</u>
Net profit		<u><u>5,735,000</u></u>

Additional information:

- The budget was prepared using absorption costing principle.
- If the budgeted production in May 2024 had been 2,000 units, then the total production cost would have been Sh.18,800,000.

Required:

Using high-low method, calculate:

- (i) The variable production cost per unit. (2 marks)

- (ii) The total monthly fixed production cost. (2 marks)

ANSWER

- (i) The variable production cost per unit.

$$\begin{aligned} &= \frac{\Delta \text{Total cost}}{\Delta \text{Output}} \\ &= \frac{18,800,000 - 18,000,000}{2000 - 1800} \\ &= \text{sh. } 4000 \text{ per unit} \end{aligned}$$

- (ii) The total monthly fixed production cost.

$$\begin{aligned} &= \text{Total cost} - \text{Total variable cost} \\ &= 18,800,000 - (2000 \times 4000) \\ &= \text{sh. } 10,800,000 \text{ per month} \end{aligned}$$

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QUESTION 2

August 2023 Question One C

The Management Accountant of Unga Safi Millers has presented the following data on machine hour and electricity consumption for the last 6 months:

Month	Machine Hours ("000")	Electricity expense (Sh. "000")
June	78	1,800
July	78	1,500
August	93	1,590
September	105	1,650

October	129	1,740
November	144	2,040

Required:

- (i) Using High-Low method of cost estimation, develop a predictor equation in the form of $Y=a+bx$. (4 marks)
- (ii) Determine the total electricity expense at 120,000 machine hours. (2 marks)
- (iii) Explain **TWO** limitations of adopting High-low method in cost estimation. (4 marks)

ANSWER

- (i) **Predictor equation in the form of $Y = a+bx$.**

High activity level = 144 (‘000 hours)

Low activity level = 78 (‘000 hours)

Total cost at high activity = 2040 (sh. 000)

Total cost at low activity = 1500 (sh. 000)

$$b = \frac{\Delta \text{Total cost}}{\Delta \text{output}} = \frac{2040-1500}{144-78} = \text{sh. 8.18 per hour}$$

$a = \text{Total cost} - \text{Total variable costs}$

$$= 2040 - (144 \times 8.18)$$

$$= 862.08 (\text{sh.000}) = 862 (\text{sh.000}) \text{ Approx}$$

$$y = 862 + 8.18x$$

(ii) Total electricity expense at 120,000 machine hours.

$$y = 862 + 8.18x$$

$$x = 120(000 \text{ hours})$$

$$y = 862 + 8.18(120)$$

$$= 1843.6 \text{ (sh.000)}$$

$$= \text{sh.1,843,600}$$

(iii) Limitations of adopting High-low method in cost estimation.

- This method assumes the presence of a linear relationship between cost and activity. It, however, is the over-simplification of the cost behavior. To get a better idea of the cost and volume behavior, we can use ABC (Activity-based costing).
- This method does not consider all the data points; instead, it uses just two data points. One can overcome this limitation by using regression analysis, which uses all data points and activity levels.
- Another limitation is that it fails to consider the impact of inflation. To overcome this, one needs to adjust the data for inflation before applying the high-low method accounting.
- It is possible that the high or low point (or both) do not represent the costs that a company would generally incur at those production levels.
- This method may ignore step cost and thus, could give inaccurate results. Step costs are the costs that a firm spends at a specific volume. If this cost comes at

a point between the high and low points, then the high-low method could give inaccurate numbers.

- This method also fails to account for any changes in the fixed or variable cost over time.

QUESTION 3

April 2023 Question Three B

Highlight **FOUR** purposes of cost estimation to a service company such as a hospital

(4 marks)

ANSWER

1. **Budgeting:** Cost estimation helps in developing accurate budgets for various departments and services within the hospital. It allows the management to allocate resources effectively and make informed financial decisions.
2. **Pricing and Revenue Generation:** Accurate cost estimation enables hospitals to determine the appropriate pricing for their services. By understanding the cost structure associated with different treatments, procedures, or services, hospitals can set prices that cover their expenses while remaining competitive in the market. It helps in ensuring that revenue generated from services is sufficient to cover costs and maintain profitability.
3. **Cost Control and Efficiency:** Cost estimation helps identify cost drivers and allows hospitals to analyze and control their expenses. By understanding the cost

components of various activities, the hospital can identify areas of inefficiency and take measures to optimize resource allocation, reduce waste, and improve overall cost-effectiveness.

4. **Contract Negotiation:** Hospitals often engage in contracts and negotiations with insurance providers, suppliers, and vendors. Accurate cost estimation provides the necessary information to negotiate favorable terms and pricing. It allows hospitals to assess the financial viability of contracts and partnerships, ensuring they are sustainable and beneficial in the long run.
5. **Strategic Planning and Decision Making:** Cost estimation serves as a basis for strategic planning and decision making within the hospital. It provides insights into the financial implications of various initiatives, expansions, investments, or changes in service offerings. Hospitals can evaluate the feasibility and profitability of new projects or investments before committing resources.
6. **Performance Evaluation:** Cost estimation helps in measuring and evaluating the financial performance of different departments or units within the hospital. By comparing estimated costs with actual costs, hospitals can identify variances and take corrective actions. It allows management to assess the efficiency and profitability of different services, contributing to continuous improvement efforts.
7. **Benchmarking:** Cost estimation facilitates benchmarking against industry standards or best practices. Hospitals can compare their cost structure and performance metrics with similar organizations to identify areas for improvement and adopt successful strategies.

QUESTION 4

December 2022 Question Five (c)

Ocean Ltd. is preparing its budget for the year ending 30 June 2023.

It is decided to estimate an equation of the form, $Y = a + bx$,

Where;

Y is the total maintenance expense at an activity level x

a is the fixed maintenance expense.

The following information relate to the year ending 30 June 2023:

Month	Machine hours	Maintenance Cost (Sh.“000”)	Month	Machine hours	Maintenance Cost (Sh.“000”)
September 2022	400	960	February 2023	240	640
October 2022	240	880	March 2023	160	560
November 2022	80	280	April 2023	480	1,350
December 2022	400	1,200	May 2023	320	660
January 2023	320	800	June 2023	160	440

Required:

- (i) Estimate the total cost function using the ordinary least squares method. (8 marks)
- (ii) Determine the total cost if 1,050 machine hours were applied. (2 marks)

ANSWER

(i) Estimating the total cost function using the ordinary least squares method

$$Y = a + bx$$

$$a = \frac{\Sigma y}{n} - b \frac{\Sigma x}{n}$$

$$b = \frac{n\Sigma xy - \Sigma x\Sigma y}{n\Sigma x^2 - (\Sigma x)^2}$$

Where: x = machine hours

y = maintenance cost in sh “000”

X	Y	XY	X ²
400	960	384 000	160 000
240	880	211 200	57 600
80	280	22 400	6400
400	1200	480 000	160 000
320	800	256 000	102 400
240	640	153 600	57 600
160	560	89 600	25 600
480	1350	648 000	230 400
320	660	211 200	102 400
<u>160</u>	<u>440</u>	<u>70 400</u>	<u>25 600</u>
<u>2800</u>	<u>7770</u>	<u>2 526 400</u>	<u>928 000</u>

$$n = 10$$

$$b = \frac{10(2526400) - 2800(7770)}{10(928000) - (2800)^2}$$

$$= \frac{3508000}{1440000}$$

$$= \text{Sh.}2.4361 \text{ per hour}$$

$$a = \frac{7770}{10} - 2.4361 \frac{(2800)}{10}$$

$$= 94.892 \text{ (sh.000)}$$

$$\text{Hence, } y = 94.892 + 2.4361x$$

(ii) Total cost if 1,050 machine hours were applied

$$y = 94.892 + 2.4361x$$

$$x = 1050 \text{ hours}$$

$$y = 94.892 + 2.4361(1050)$$

$$= 2652.797 \text{ (sh.000)}$$

$$= \text{Sh.}2\,652\,797$$

QUESTION 5

August 2022 Question Four (a)

- (a) (i) Explain the term “industrial engineering technique” as used in cost estimation. (2 marks)
- (ii) Highlight three advantages of the industrial engineering technique. (3 marks)

ANSWER

(i) Term “industrial engineering technique” as used in cost estimation

Industrial engineering technique refers to the method or approach to cost estimation which involves complex analysis of an activity into physical elements in terms of

materials, labour and equipment and then each physical element is costed separately for materials, labour and overheads.

(ii) Advantages of the industrial engineering technique

- It's a very accurate method of analyzing an activity into its physical components for cost estimation
- Provides more accurate and reliable cost estimates for effective budgeting
- It is highly adaptive to information technology

QUESTION 6

April 2022 Question One (c)

Jambo Ltd. manufactures bracelets for export trade. The sales revenue is dependent on level of advertising expenditure per month. The company has recorded the following sales information for the past six months:

Month	Advertising expenditure Sh. "000"	Sales revenue Sh. "000"
1	1.5	30
2	2	27
3	1.75	25
4	3	40
5	2.5	32
6	2.75	38

The following has also been calculated:

$\Sigma(\text{Advertising expenditure})$	
$\Sigma(\text{Sales revenue})$	Sh.13,500
$\Sigma(\text{Advertising expenditure} \times \text{Sales revenue})$	Sh.192,000
$\Sigma(\text{Sales revenue}^2)$	Sh.447,250,000
$\Sigma(\text{Advertising expenditure}^2)$	Sh.6,322,000,000
	Sh.32,125,000

Required:

Estimate fixed and variable elements of the sales revenue using the least squares regression analysis. (6 marks)

ANSWER

$$\begin{aligned} b &= \frac{n \Sigma XY - \Sigma X \Sigma Y}{n \Sigma X^2 - (\Sigma X)^2} \\ &= \frac{(6 \times 447,250,000) - (13,500 \times 192,000)}{(6 \times 32,125,000) - 13,500^2} \\ &= \frac{91,500,000}{10,500,000} \\ &= 8.71 \end{aligned}$$

$$\begin{aligned} a &= \frac{\Sigma y}{n} - b \frac{\Sigma x}{n} \\ &= \frac{192,000}{6} - \left(8.71 \times \frac{13,500}{6} \right) \\ &= 32,000 - 19,597.50 \\ &= \text{Sh. } 12,402.50 \\ Y &= 12,402.50 + 8.71x \end{aligned}$$

Fixed element Sh. 12,402.50 variable element 8.71x

QUESTION 7

December 2021 Question Two (b)

The following data was provided by the cost accountant of Miradi Ltd. relating to marketing expenses and sales for a period of first eight months of the financial year ending 31 December 2021.

Month	1	2	3	4	5	6	7	8
Total marketing expenses (Sh."000`)	265	302	222	240	362	295	404	400
Sales units (000)	20	24	16	18	26	22	32	30

Preliminary calculations have established the following analysis using the equation in the

form of $y = a + bx$

$$\Sigma(\text{sales unit}) = 4,640 \text{ million}$$

$$\Sigma(\text{total marketing expenses}) = \text{Sh.}809,598 \text{ million}$$

$$\Sigma(\text{total marketing expenses} \times \text{sales units}) = \text{Sh.}61.250 \text{ million}$$

Required:

Predict the total marketing expenses for the ninth month when planned sales are 44,000

units. (8 marks)

ANSWER

X „000“	Y „000“	XY	X ²
20	265	5300	400
24	302	7248	576

16	222	3552	256
18	240	4320	324
26	362	9412	676
22	295	6490	484
32	404	12928	1028
<u>30</u>	<u>400</u>	<u>12000</u>	<u>900</u>
<u>188</u>	<u>2,490</u>	<u>61250</u>	<u>4640</u>

$$b = \frac{n \sum xy - \sum x \sum y}{n \sum x^2 - (\sum x)^2}$$

$$= \frac{(8 \times 61,250) - (188 \times 2490)}{(8 \times 4640) - (188)^2}$$

$$= \frac{490,000 - 468,120}{37,120 - 35,344}$$

$$= \frac{21,880}{1776}$$

$$= \text{Sh. } 12.32$$

$$a = \frac{\sum y}{n} - b \frac{\sum x}{n}$$

$$= \frac{2490}{8} - \left(12.32 \times \frac{188}{8} \right)$$

$$311.25 - 289.52$$

$$= 21.73$$

$$Y = a + bx$$

$$Y = 21.73 + 12.32x$$

Total marketing expenses when sales units are 44,000

$$= 21.73 + (12.32 \times 44)$$

$$= 21.73 + 542.08$$

$$= 563.81$$

$$563.81 \times 1000$$

$$= \text{Sh. } 563,810$$

QUESTION 8

September 2021 Question One B

Meyton Ltd. reported the following production costs for the 12-month period from. 1

January 2020 to December 2020:

Period	Total production cost (Sh."000")	Level of activity (Units produced)
January	460	30
February	300	22
March	480	33
April	550	39
May	570	41
June	310	24
July	410	29
August	455	32
September	530	38
October	250	15
November	700	45
December	490	35

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Required:

- (i) Using linear regression, establish the production function in the form of $Y = a + bx$.
- (ii) (8 marks)
- (iii) From the equation in (b) (i) above, estimate the production cost that would be incurred on 50 units. (2 marks)
- (iv) State any two advantages of regression method of cost estimation. (2 marks)

ANSWER

- (i) **Production function in the form of $Y = a + bx$.**

X	Y “000”	X ²	XY “000”
30	460	900	13,800
22	300	484	6,600
33	480	1,089	15,840
39	550	1,521	21,450
41	570	1,681	23,370
24	310	576	7,440
29	410	841	11,890
32	455	1,024	14,560
38	530	1,444	20,140
15	250	225	3,750
45	700	2,025	31,500
35	490	1,225	17,150
$\Sigma X = 383 \quad \Sigma Y = 5,505 \quad \Sigma X^2 = 13,035 \quad \Sigma XY = 187,490$			

$$b = \frac{n\sum XY - \sum X \sum Y}{n\sum X^2 - (\sum X)^2}$$

$$\frac{(12 \times 187,490,000) - (383 \times 5,505,000)}{(12 \times 13,035) - (383 \times 383)}$$

$$\frac{141,465,000}{9,731}$$

$$b = 14,537.56$$

$$a = \frac{\sum Y - b\sum X}{n}$$

$$\frac{5,505,500 - (14,537.56 \times 383)}{12}$$

$$a = -5,240.47$$

$$y = -5,240.47 + 14,537.56X$$

(ii) Production cost that would be incurred on 50 units.

$$y = -5,240.47 + 14,537.56 (50)$$

$$= \text{Sh. } 721,637.53$$

(iii) **Advantages of regression method of cost estimation.**

1. Regression analysis help in making prediction and forecasting for business in near and long term.
2. It supports business decisions by providing necessary information related to dependent target and predictors.
3. Regression analysis enables business in correcting errors by doing proper analysis of results derived from decisions.
4. Business used regression analysis technique for identifying new opportunities in market.

QUESTION 9

May 2021 Question One B

Kedren Ltd. manufactures a single product. During the period from January 2021 to March 2021, the following data was recorded:

Month	Output	Cost
	(Units)	(Sh.)
January	8,240	167,590
February	8,750	173,260
March	8,100	165,772

Required:

- (i) Using the high-low method, derive a predictor equation in the form of $Y = a + bx$ for the company. (4 marks)
- (ii) Determine the total cost that would be incurred to produce 8,500 units of the product. (2 marks)

ANSWER

i) $y = a + bx$

$$b = \frac{173,260 - 165,772}{8,750 - 8,100} = \frac{7,488}{650} = 11.52$$

$$165,772 = b + 8,100 (11.52)$$

$$b = 165,772 - 93,312$$

$$b = 72,460$$

$$y = 72,460 + 11.52x$$

ii) $y = 72,460 + 11.52 (8500)$

$$Y = 170,380$$

$$\text{Sh.170, 380}$$

QUESTION 10

November 2020 Question One B

Ujenzi Company specialises in the manufacture of building blocks used in the construction industry. The cost accountant of the company has prepared a schedule of estimated overhead cost on the assumption that production will be 170,000 blocks.

Overhead costs have been classified as fixed and variable costs by the company's cost accountant as indicated below:

Overheads	Amount Sh. "000"
Indirect materials	5,700 (all variable)
Indirect labour	4,100 (all variable)
Rent and rates	2,800 (all fixed)
Machinery depreciation	1,700 (all fixed)
Maintenance	5,200 (3,100 variable)
Technical support	1,620 (all fixed)
Storage cost	4,300 (4,100 variable)
Heat and light	3,100 (1,000 fixed)
Water bill	1,700 (650 fixed)
Transport	2,900 (900 fixed)
Supplies	4,000 (all variable)

Required:

Using accounts analysis method, determine a cost estimation equation in the form of

$Y = a + bX$ taking the number of blocks to be the only cost driver. (8 marks)

ANSWER

Account analysis method

Cost	Variable cost Sh. —000	Fixed Sh. “000”
Indirect materials	5,700	0
Indirect labour	4,100	0
Rent and taxes	0	2,800
Machinery depreciation	0	1,700
Maintenance	3,100	2,100
Technical support	0	1,620
Storage cost	4,100	200
Heat and light	2,100	1,000
Water bill	1,050	650
Transport	2,000	900
Supplies	4,000	0
Total	<u>26,150</u>	<u>10,970</u>

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Cost function $y = a + bx$

Where:

$$a = \text{total fixed cost} = \text{sh. } 10,970,000$$

$$b = \text{variable cost per unit} = \frac{26,150,000}{170,000} = \text{Sh. } 153.82$$

$$x = \text{units of output}$$

$$Y = 10,970,000 + 153.82x$$

QUESTION 11

November 2019 Question One B

Dilica Ltd. makes and sells a single product called "Delicious". It is currently operating at 80% of full capacity, producing 112,000 units per month. The total monthly costs at the current level of operation are Sh. 611,000. At 100% capacity, total monthly costs would be Sh.695,000 while fixed costs would be the same per month at all levels of capacity between 80% and 100%.

Additional information:

- 1 At the normal selling price of the product, the contribution to sales ratio is 60%.
2. A new customer has offered to buy 25,000 units of the product each month at 20% below the normal selling price.
3. Dilica Ltd. estimates that for every five units that it sells to this customer, it will lose one unit of its current monthly sales to other customers.

Required:

- (i) The variable cost per unit of product "Delicious" and the total fixed cost per month. (5 marks)
- (ii) The current normal sales price per unit, and the contribution per unit at this price. (4 marks)
- (iii) Advise the management of Dilica Ltd. on whether the offer from the new customer should be accepted. (5 marks)

ANSWER

i) Variable cost per unit “delicious” and the total fixed cost per month

$$\text{Total cost @80\%} = \text{Sh } 611000$$

$$\text{Output} = \text{shs } 112000 \text{ units}$$

$$\text{@ 100\%} = \text{Sh. } 695\,000$$

∴ by use of high low method

$$\text{if } 112000 = 80\%$$

$$? = 100\%$$

$$= \frac{100 \times 112,000}{80} = 140\,000$$

$$\text{Unit cost} = \frac{695,000 - 611,000}{140,000 - 112,000}$$

$$F = \frac{841,000}{28,000} = \text{Sh } 3 \text{ unit}$$

@ 100% capacity

$$y = a + bx$$

$$695,000 = a + (3 \times 140,000)$$

$$695,000 = a + 420,000$$

$$a = Sh\ 275,000$$

ii) The Current normal sales price per unit, and contribution per unit at this price.

$$CSR = \frac{S.P - V.C}{S.P} \times 100$$

$$60 = \frac{x - 3}{x} \times 100$$

$$0.6 = \frac{x - 3}{x}$$

$$0.6x = x - 3$$

$$0.6x - x = -3$$

$$0.4x = -3$$

$$x = \frac{-3}{0.4}$$

$$x = Sh\ 7.5$$

$$S.P = 7.5$$

Contribution per unit (CPU)

$$CPU = S.P - V.C$$

$$= 7.5 - 3$$

$$= \text{sh. } 4.6 \text{ per unit}$$

iii) Advice to divide whether to accept or reject the offer from the new customers

Contribution associated with the offer

$$S.P = 806 \times 7.5 = 6 \text{ per unit}$$

$$V.C = 3$$

$$\text{Instalment sales} = 6 \times 250,000 = 150,000$$

$$\text{Total } V.C = 3 \times 25,000 = 75,000$$

$$\begin{aligned} \text{best contribution} &= \left(\frac{25000}{5} \times 1 \right) \times 4.5 \\ &= 225,000 \end{aligned}$$

$$\text{Total cost} = (75,000 + 22,500)$$

$$= 97,500$$

$$\begin{aligned}\text{Contribution} &= (150,000 - 97,500) \\ &= \text{Sh. } 52,500\end{aligned}$$

Advice

Accept the offer since it will contribute for the contribution profit by sh 52,500

QUESTION 12

May 2019 Question One B

(b) (i) Highlight four advantages of regression method of cost estimation. (4 marks)

(ii) The following data relates to the total costs incurred by Makini Garage Ltd. in a period of eight weeks:

Week	Number of cars repaired	Total costs incurred
		Sh. "000"
1	90	5,200
2	100	6,000
3	120	6,200
4	150	3,530
5	160	3,850
6	220	4,300
7	300	5,870
8	340	7,150

Required

Using regression analysis method, formulate an equation in the form of $Y = a + bx$ that could be used to estimate the total costs incurred. (8 marks)

ANSWER

(i) Regression method of cost estimation

This is a technique of estimating the line of best fit

Advantages of regression analysis

- Results are easy to understand and interpret
- Regression method can be used in predicting at any output level
- It can be subjected to further statistical analysis to determine reliability of estimates
- It tends to give more accurate results

ii) Regression equation in the form of $y=a+bx$

x	y '000'	xy (,000')	x^2
90	5,200	468,000	8,100
100	6,000	600,000	10,000
120	6,200	744,000	14,400
150	3,530	529,500	22,500
160	3,850	616,000	25,600
220	4,300	946,000	48,400
300	5,870	1,761,000	90,000
<u>340</u>	<u>7,150</u>	<u>2,431,000</u>	<u>115,600</u>
$\Sigma x=14,80$	$\Sigma y=42,100$	$\Sigma xy=8,095,500$	$\Sigma x^2 =334,600$

$$b = \frac{n\Sigma xy - \Sigma x \Sigma y}{n\Sigma x^2 - (\Sigma x)^2}$$

$$\begin{aligned} b &= \frac{(8 \times 8,095,500) - (1,480 \times 42,100)}{(8 \times 334,600) - 1,480^2} \\ &= \frac{64,764,000 - 62,308,000}{2,676,800 - 2,190,400} \\ &= \frac{2,456,000}{486,400} = 5.05 \\ a &= \frac{\Sigma y}{n} - b \frac{\Sigma x}{n} \\ &= \left(\frac{42,100}{8} \right) - \left(5.05 \times \frac{1,480}{8} \right) \\ &= 5,262.5 - 934.25 \\ &= 4,328.25 \end{aligned}$$

Therefore the regression equation = $4,328.25 + 5.05x$

QUESTION 13

November 2018 Question Five C

- i) Explain the term "industrial engineering method" in relation to cost estimation. (3 marks)
- (ii) Highlight three circumstances under which the use of industrial engineering method of cost estimation is appropriate. (3 marks)

ANSWER

- (i) Explanation the term "industrial engineering method" in relation to cost estimation

Industrial engineering entails use of engineering analysis to establish the required levels of inputs for a particular output level. The approach is very detailed, lengthy and can be expensive though fairly accurate. The physical inputs established are converted into money cost for decision making, engineering method is useful for estimating costs where input and output have clear relationships e.g the cost associated with direct materials, direct labor etc. it involves use of work study and production engineering techniques and seeks to establish what cost should be

ii) Circumstances under which the use of industrial engineering method of cost estimation appropriate

- Where no other method can be used
- Where a single product is involved where the production specifications are known and stable
- Where there are no previous cost records

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QUESTION 14

May 2018 Question Two B

The administrator of Chebatok Hills Hospital would like to establish a cost formula linking the administrative costs involved in admitting patients to the number of patients admitted during the month. The admissions department's costs and the number of patients admitted during the last eight months for the year 2017 are given below:

Month	Number of patients admitted	Admission department's Cost "Sh."
May	1,800	14,700
June	1,900	15,200
July	1,700	13,700
August	1,600	14,000
September	1,500	14,300
October	1,300	13,100
November	1,100	12,800
December	1,500	14,600

Required:

- (i) Using the high-low method, estimate the fixed and variable components of admission costs. (4 marks)
- (ii) Using the least squares method, estimate the relationship between number of patients admitted and the admission costs in the form of $Y = a + bx$. (8 marks)
- (iii) Using the relationship obtained in (b) (ii) above, estimate the admission costs incurred in January 2018 if admission was 2,000 patients. (2 marks)

ANSWER

i) Using high low method to estimate cost

Highest output level 1900 patients & cost 15,200 lowest output level 1100 patients and cost 12,800 equation of $y = a + bx$

$$\text{Where } b = \frac{\text{Change in cost}}{\text{Change in output}}$$

$$\frac{15200 - 1280}{1900 - 1100} = sh.3$$

$$y = a + bx$$

Where : y = Total cost

a = Fixed cost

B = Variable cost

X = Output

Assuming output is 1900 patients then:

$$15,200 = a + 3 \times 1900$$

$$15,200 = a + 5700$$

$$a = 9500$$

$$\text{Then equation } y = 9500 + 3x$$

ii) Using simple regression analysis

x	y	xy	x^2
1800	14,700	26,460,000	3,240,000
1900	15,200	28,880,000	3,610,000
1700	13,700	23,290,000	2,890,000
1600	14,000	22,400,000	2,560,000
1500	14,300	21,450,000	2,250,000
1300	13,100	17,030,000	1,690,000

1100	12,800	14,080,000	1,210,000
1500	14,600	21,900,000	2,250,000
$\Sigma x = 12400$	$\Sigma y = 112,400$	$\Sigma xy = 175,490,000$	$\Sigma x^2 = 19,700,000$

$$b = \frac{n \Sigma xy - \Sigma x \Sigma y}{n \Sigma x^2 - (\Sigma x)^2}$$

$$= \frac{(8 \times 175,490,000) - (12499 \times 112,400)}{8 \times 19700\ 000 - 12400^2}$$

$$= 10160\ 000 \div 3840\ 000 = 2.646$$

$$a = \frac{\Sigma y}{n} - b \frac{\Sigma x}{n}$$

$$= \frac{112400}{8} - \left(2.645 \times \frac{12400}{8} \right)$$

$$= 14050 - 4099.75$$

$$= Sh. 9950.25$$

Now regression equation

$$y = 9950.25 + 2.645x$$

iii) Total cost for 2000 patients

$$y = 9950.25 + 2.645x$$

$$9950.25 + 2.645 \times 2000$$

$$= Sh. 15,240.25$$

QUESTION 15

November 2017 Question Three B

Summarise three limitations of accounts analysis as a method of cost estimation(3 marks)

ANSWER

Limitations of account analysis as a cost estimation method:

Account analysis also called **inspection of accounts method**. It's a method where departmental managers and the accountant inspect each item of expenditure within the accounts for some output level and then classify each of these items as either fixed, variable or mixed(both fixed and variable)

Once the classification is done, the totals for both variable and fixed costs are obtained and the average unit cost for each category obtained. The mixed costs are separated into either fixed or variable and unit cost obtained.

Limitation of account analysis

- The method uses past data for the cost accounts which in most cases is not representative of future conditions thus statistical evaluation may be difficult.
- The initial classification of costs as either fixed or variable is very subjective as different managers will classify some costs differently.
- The method of dealing with semi-variable costs is often arbitrary and these costs may be forced to fall as either fixed or variable category which leads to inaccuracy.

- The model's reliability and validity cannot be determined as we cannot measure the size of probable error in forecasts made i.e. it lacks statistical vigor.

QUESTION 16

May 2017 Question One C

Baraka Ltd. manufactures a single product which is meant for the local market only. The monthly demand for the product varies from one month to the other.

During the month of April 2017, 500 units were produced incurring the following expenses:

	Sh.
Direct materials	70,000
Direct labour	60,000
Rent (Fixed)	35,000
Electricity (30% Fixed)	25,000
Property taxes and rates (70% variable)	60,000
Technical support (Fixed)	<u>35,000</u>
	<u>285,000</u>

Required:

- Using the account analysis method, formulate a predictor equation in the form of $Y = a + bx$. (8 marks)
- Baraka Ltd. intends to produce 700 units during the month of June 2017. Estimate the costs to be incurred. (2 marks)

ANSWER

i) Account analysis

Overhead	variable	fixed
Direct materials	70,000	-
Direct labour	60,000	-
Rent	-	35,000
Electricity	17,500	7,500
Property taxes and rates	42,000	18,000
Technical support	-	35,000
	<u>189,500</u>	<u>95,500</u>

$$Y = a + bx$$

Where: a $\longrightarrow$ total fixed cost = shs 95,500

b $\longrightarrow$ variable cost per unit = $\frac{189,500}{500}$

= sh. 379

$\therefore$ There fore equation = $Y = a + bx$

$$\therefore Y = 95500 + 379x$$

ii) Costs to be incurred for producing 700 units

$$Y = 95500 + 379x$$

$$= 95500 + 379 \times 700$$

$$= sh\ 360,800$$

QUESTION 17

November 2016 Question One C

The production manager of Tamuh Sugar Company is concerned about the apparent fluctuations in efficiency and work done by employees which are related to the volume.

A twelve week research was undertaken and the following were the outcomes:

Week	Machine hours	Indirect labour cost Sh.
1	68	1,190
2	88	1,211
3	62	1,004
4	72	917
5	60	770
6	96	1,456
7	78	1,180
8	46	710
9	82	1,316
10	94	1,032
11	68	752
12	48	963

Required:

Using the ordinary least squares (OLS) method:

- Formulate the cost function for the above relationship. (8 marks)
- Compute the indirect labour cost associated with 120 machine hours. (2 marks)

ANSWER

i) Cost function

Week	x	y	Xy	X ²
1	68	1190	80,920	4,624
2	88	1211	106,568	7,744
3	62	1004	62,248	3,844
4	72	917	66,024	5,184
5	60	770	46,200	3,600
6	96	1456	139,776	9,216
7	78	1180	92,040	6,084
8	46	710	32,660	2,116
9	82	1316	107912	6724
10	94	1032	97008	8836
11	68	752	51136	4624
12	48	963	46224	2304
	$\Sigma x=862$	$\Sigma y=12,501$	$\Sigma xy=928,716$	$\Sigma x^2 =64,900$

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Linear equation $Y = a + bx$

$$b = \frac{n\Sigma xy - \Sigma x \Sigma y}{n\Sigma x^2 - (\Sigma x)^2}$$

$$= \frac{12 \times 928,716) - (862 \times 12,501}{(12 \times 64900) - 862^2}$$

$$= \frac{11,144,592 - 10,775,862}{778,800 - 743,044}$$

$$b = 368,730 \div 35,756$$

$$b = 10.312$$

$$a = \frac{\sum y}{n} - b \frac{\sum x}{n}$$

$$\frac{12,501}{12} - \left(10.312 \times \frac{862}{12} \right)$$

$$= 1041.75 - 740.75 = 301$$

$$OLS \text{ equation } \therefore y = 301 + 10.312x$$

ii) Indirect labour cost associated with 120 machine hours

$$y = 301 + 10.312x$$

$$= 301 + (10.312 \times 120)$$

$$= 301 + 1237.44$$

$$= \text{Sh. } 1538.44$$

QUESTION 18

May 2016 Question Two B

Talde Ltd., a manufacturing company, is concerned about the variation in its total manufacturing costs. The production manager has therefore requested you to estimate a predictable cost pattern to be used in future cost prediction.

Based on judgement, the plant manager has classified each manufacturing cost as fixed, variable, or part fixed and part variable. He has provided you with the following information for the month of April 2016 when 10,000 units were produced:

Details of cost	Cost Sh.	Cost behaviour
Direct materials	420,000	Variable
Direct labour	150,000	Variable
Depreciation	80,000	Fixed
Telephone	2,000	Fixed
Other utilities	40,000	20% fixed
Supervisors salary	200,000	80% fixed
Equipment repairs	60,000	10% fixed
Indirect materials	4,000	Variable
Factory maintenance	60,000	90% fixed

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Required:

- (i) Using the accounts analysis method, estimate the fixed cost per month and the variable cost per unit. (7 marks)
- (ii) Based on your answer in part (b)(i) above, compute the incremental cost of producing 2,000 units.

ANSWER

i) Account analysis method

Details of cost	Fixed Sh.	Variable Sh.
Direct materials	-	420,000
Direct labour	-	150,000
Depreciation	80,000	-
Telephone	2,000	-
Other utilities	8,000	32,000
Supervisors salary	160,000	40,000
Equipment repairs	6,000	54,000
Indirect materials	-	4,000
Factory maintenance	<u>54,000</u>	<u>6,000</u>
	<u>310,000</u>	<u>706,000</u>

Fixed cost per month = Sh. 310,000

$$\text{Variable cost per unit} = \frac{\text{Total variable cost}}{\text{Output}}$$

$$= \frac{\text{Sh. 706,000}}{\text{Sh. 10 000}}$$

$$= \text{Sh 70.6 per unit}$$

$$\text{Cost equation} = y + a + bx$$

$$y = 310\,000 + 70.6$$

ii) Incremental cost of producing 2000 units

$$= 70.6 \times 2000 = \text{sh. 141,200}$$

TOPIC 4

COST ACCUMULATION

QUESTION 1

April 2024 Question Two B

Dynamok Ltd., manufactures bicycles. The company uses job costing to allocate costs to individual products provided to its customers. The company has three production departments T, Q and M.

The company has commenced the preparation of its fixed production overhead cost budget for the next financial year and has identified the following costs:

Overhead cost	Sh.“million”	Basis of apportionment
Depreciation	660	Net book value of equipment
Indirect labour	900	Direct labour hours
Repairs and maintenance	110	30% to T, 50% to Q and 20% to M
Heating and lightning	90	Floor area
Consumable supplies	30	Direct labour hours
General overheads		20% of direct wages cost of each department

The costs are apportioned to the individual production departments; T, Q and M as follows:

Production department	T	Q	M
Direct labour hours	5,000	3,000	2,000

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Direct wages cost (Sh. Million)	150	210	100
Number of employees	25	15	10
Floor area in square metres (M2)	5,000	4,000	1,000
Net book value of equipment (Sh. Million)	80	50	90

Required:

- (i) The primary allocation of production overhead costs to the three departments. (6 marks)
- (ii) Calculate the overhead absorption rate (OAR) for each department based on direct labour hours. (3 marks)
- (iii) A quotation for a job made as batch BQ23 has the following estimated information:

Direct material cost	Sh.140,000,000
Direct labour hours	550 hours in department T
	890 hours in department Q
	160 hours in department M

Required:

Using the OAR computed in (b) (ii) above, compute the total cost of job batch BQ23.

(5 marks)

ANSWER

Required:

- (i) The primary allocation of production overhead costs

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Details	Base	Production Departments			Total
		T	Q	M	
		Sh. „m“	Sh. „m“	Sh. „m“	
Depreciation	NBV of equipment (80:50:90)	240	150	270	660
Indirect Labour	Direct labour hours (5:3:2)	450	270	180	900
Repairs and maintenance	% of service (30:50:20)	33	55	22	110
Heating and Lighting	Floor Area (5:4:1)	45	36	9	90
Consumable supplies	Direct Labour hours (5:3:2)	15	9	6	30
General Overheads	20% of direct wages cost of each department	30	42	20	92
Total		813	562	507	1882

(ii) Overhead absorption rate (OAR) for each department

$$\text{OAR} = \frac{\text{Budgeted production overheads}}{\text{Budgeted activity}}$$

Department	OAR
T	$= \frac{\text{sh.}813,000,000}{5000 \text{ hours}} = \text{sh. } 162600/\text{hour}$
Q	$= \frac{\text{sh.}562,000,000}{3000 \text{ hours}} = \text{sh. } 187,333/\text{hour}$
M	$= \frac{\text{sh.}507,000,000}{2000 \text{ hours}} = \text{sh. } 253,500/\text{hour}$

(iii) Total cost of job batch BQ23.

	Sh. „000“	Sh. „000“
Direct Material cost		140,000
Direct labour:		
Dept. T (550 × 30,000w ₁)	16,500	
Dept. Q (890 × 70,000w ₂)	62300	
Dept. M (160 × 50,000w ₃)	<u>8,000</u>	<u>86,800</u>
Total prime cost		226,800
Production Overheads:		
Dept. T (550 × 162,200)	89,430	

Dept. Q (890× 187,333)	166,726	
Dept. M (160× 253,500)	<u>40,560</u>	<u>296,716</u>
Total Job cost		523,516

Basic workings (w)

Direct Labour hour rate for:

1. Dept. T

$$= \frac{150,000,000}{5000}$$

= sh. 30,000 per hour

2. Dept. Q

$$= \frac{210,000,000}{3000}$$

= sh. 70,000 per hour

3. Dept. M

$$= \frac{100,000,000}{2000}$$

= sh. 50,000 per hour

QUESTION 2

April 2024 Question Three B

Luxury Weekend County Park is an entertainment park that offers individual and family entry tickets. The tickets include a meal, three types of beverages and unlimited use of the swimming pools. Luxury Weekend County Park has the following ticket prices and variable costs for the year 2024:

Ticket class			
	Individual	Family	Total
	Sh.	Sh.	Sh.
Selling price per ticket	2,400	3,000	
Variable cost per ticket:			
Cost of meal	(740)	(800)	
Direct labour	(600)	(600)	
Variable cost of beverages	(240)	(250)	
Swimming cost	<u>(220)</u>	<u>(250)</u>	
Contribution margin	<u>600</u>	<u>1,100</u>	
Apportioned annual fixed costs (Sh.)	3,375,000	4,125,000	7,500,000
Expected tickets to be sold	6,000	4,000	10,000

Additional information:

- All the assumptions of cost volume profit (CVP) analysis are valid.
- Total sales mix is currently generated by the two type of tickets in the following proportions:

Individual	60%
Family	40%

Required:

- Compute the weighted average contribution margin at the current sales mix assumed above. (2 marks)
- Calculate the total number of tickets that Luxury Weekend County Park must sell to break-even. (2 marks)

- (iii) The margin of safety in units for Luxury Weekend County Park. (2 marks)
- (iv) Calculate the number of individual tickets and the number of family tickets that Luxury Weekend County Park must sell to break-even. (2 marks)

ANSWER

(i) Weighted average contribution margin

Current sales mix = 60:40

= 3:2 for the individual and family tickets respectively

Ticket class	Standard mix	Contribution Margin Sh.	Total contribution at standard mix Sh.
Individual	3	600	1800
Family	<u>2</u>	1100	<u>2200</u>
	<u>5</u>		<u>4000</u>

$$\begin{aligned}
 WACM &= \frac{\text{Total contribution at std mix}}{\text{Total units at std mix}} \\
 &= \frac{\text{sh.4000}}{5 \text{ units}} = \text{sh. 800 per unit}
 \end{aligned}$$

(ii) Total number of tickets that must sell to break-even.

$$\begin{aligned}
 &= \frac{\text{Total fixed costs}}{WACM} \\
 &= \frac{\text{sh.7,500,00}}{\text{sh.800 per unit}} \\
 &= 9375 \text{ tickets}
 \end{aligned}$$

(iii) The margin of safety in units.

$$\begin{aligned}
 MOS &= \text{Budgeted units} - \text{Break even units} \\
 &= 10,000 - 9375
 \end{aligned}$$

= 625 tickets

- (iv) **Number of individual tickets and the number of family tickets that must sell to break-even.**

Ticket class	Standard mix	Break even units
Individual	3	$\frac{3}{5} \times 9375 = 5625$
Family	<u>2</u>	$\frac{2}{5} \times 9375 = \underline{3750}$
Total	<u>5</u>	<u>9375</u>

QUESTION 3

December 2023 Question One B

Godoro Ltd. supplies high quality mattresses. The company outsources these mattresses from a supplier in town. Godoro Ltd. estimates that the total inventory holding cost of one mattress per annum is as follows:

Cost	Percentage of purchase price per unit per annum (%)
Opportunity cost	5
Obsolescence cost	4
Storage charges	3
Handling cost	2
Insurance cost	<u>1</u>
	<u>15</u>

Additional information:

- The annual sales demand of the mattresses is 480 mattresses.

2. Each mattress costs Sh.4,000 to purchase from the supplier.
3. The ordering cost is Sh.6,250 per order.
4. The supplier offers a 3% discount for orders of 120 mattresses and a discount of 5% for orders of 180 mattresses.

Required:

- (i) The economic order quantity (EOQ) of the mattresses. (2 marks)
- (ii) The cost minimising order size from the supplier. (4 marks)

ANSWER

Required:

- (i) The economic order quantity (EOQ) of the mattresses.

$$EOQ = \sqrt{\frac{2Dc_o}{c_h}}$$

$$D = 480$$

$$C_o = 6250$$

$$C_h = 15\% \times 4000$$

$$= 600$$

$$EOQ = \sqrt{\frac{2 \times 480 \times 6250}{600}}$$

$$= 100 \text{ mattresses per order}$$

- (ii) The cost minimising order size from the supplier.

Order size	100 mattresses	120 mattresses
	Sh.	Sh.
Purchase cost ($D \times P$) 480×4000	1,920,000	$1920000 \times 97\% = 1,862,400$
Ordering cost ($\frac{D}{Q} \times C_o$) $\frac{480}{100} \times 6250$	30,000	$\frac{480}{120} \times 6250 = 2500$
Holding cost ($\frac{Q}{2} \times C_h$) $\frac{100}{2} \times 600$	30,000	$\frac{120}{2} \times (97\% \times 600) = 34920$
Total cost	1,980,000	1,922,320

Hence, the cost minimizing order size is 120 mattresses to be ordered from the supplier.

QUESTION 4

December 2023 Question Three A

Differentiate between “overhead allocation” and “overhead absorption”. (4 marks)

ANSWER

Differences between overhead allocation and overhead absorption

Overhead allocation	Overhead absorption
Involves the distribution or charging of overheads to various cost centres where they have been incurred	Involves the charging of overheads of the production cost centres/ departments to products or cost units for the purpose of ascertaining the cost of producing a product or unit of the product of the company

Involves only direct overheads	Involves both direct and indirect overheads
Takes place during primary overhead analysis stage	Occurs after the primary and secondary analysis stages of overheads have been finalized

QUESTION 5

August 2023 Question Two B

Tazam Ltd. is developing a cost accounting system. Initially it has been decided to create four centres: Accommodation deals with guests, Kitchen prepares meals while Tours and Entertainment are internal service recreation centres.

The following overheads details have been estimated for the month of August 2023:

Type of overhead	Sh. "000"
Rent and taxes	75,000
General lighting	30,000
Indirect wages	150,000
Petrol and engine oil	88,500
Depreciation on tour buses	<u>500,000</u>
	<u>843,500</u>

The following information is also available:

	Total	Accommodation	Kitchen	Tours	Entertainment
Direct wages	500,000	150,000	100,000	150,000	100,000
(Sh.—00’')					
Floor are(m ²)	100,000	30,000	25,000	20,000	25,000
Value of tour buses Sh.‘000’)	1,250,000	350,000	650,000	150,000	100,000
Lighting points	60	20	15	10	15
Number of petrol fillings	150	40	50	60	-

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Additional information:

1. In August 2023, it is estimated that there will be 20 guest-nights in Accommodation and 480 meals will be served in the Kitchen.
2. Secondary allocation of overheads is as follows:

Cost centre	Accommodation	Kitchen	Tours	Entertainment
Tours	60%	30%	-	10%
Entertainment	50%	30%	20%	

Required:

- (i) Prepare an overhead analysis statement (OAS) showing primary allocation to each centre. (10 marks)
- (ii) Secondary allocation of the internal service recreation centre costs to production departments using simultaneous method. (4 marks)
- (iii) Calculate the appropriate overhead absorption rates for Accommodation and Kitchen. (2 marks)

ANSWER

- (i) **Overhead analysis statement (OAS) showing primary allocation to each centre.**

Details	Base	Cost centre				Total sh.000
		Accommodation Sh.000	Kitchen Sh.000	Tours Sh.000	Entertainment Sh.000	
Direct wages	Direct	150,000	100000	150000	100000	500000
Rent and taxes	Floor area	22500	18750	15000	18750	75000
General lighting	Lighting points	10000	7500	5000	7500	30000
Indirect wages	Floor area	45000	37500	30000	37500	150000
Petrol	No. of	23600	29500	35400	0	88500

and engine oil	petrol fillings					
Dep. on tour buses	Value of tour buses	140000	260000	60000	40000	500000
Total		391100	453250	295400	203750	1343500

(ii) Secondary allocation of the internal service recreation centre

Let: x = Total overheads of the tours service dept.

y = Total overheads of the entertainment service dept.

$$x = 295400 + 0.2y \dots\dots\dots i$$

$$y = 203750 + 0.1x \dots\dots\dots ii$$

$$x = 295400 + 0.2(203750 + 0.1x)$$

$$= 295400 + 40750 + 0.02x$$

$$0.98x = 336150$$

$$x = 343010 \text{ (sh.000) Approx}$$

$$y = 203750 + 0.1(343010)$$

$$= 238051 \text{ (sh.000) Approx}$$

Details	Production Department		
	Accommodation	Kitchen	Total
	Sh.000	Sh.000	Sh.000
Direct overheads	391100	453250	844350
Appointment of 90% of tours OHS(6:3)	205806	102903	308709
Appointment of 80% of entertainment OHS (5:3)	119026	71415	190441
Total	715932	627568	1343500

(iii) **Appropriate overhead absorption rates for Accommodation and Kitchen.**

$$\text{OAR} = \frac{\text{Budgeted overheads}}{\text{Budgeted activity}}$$

Accommodation:

$$\text{OAR} = \frac{\text{sh.715,932,000}}{20 \text{ guest nights}}$$

$$= \text{sh.35,796,600}$$

Kitchen:

$$\text{OAR} = \frac{\text{sh.627,568,000}}{480 \text{ meals}}$$

$$= \text{sh.1,307,433 Approx}$$

QUESTION 6

August 2023 Question Four A

Explain **THREE** factors that might be considered before choosing a suitable method for labour remuneration. (6 marks)

ANSWER

- **Cost:** The cost of operating the labor remuneration system should not exceed the anticipated benefits, i.e should be cost effective
- **Understandability:** Should be simple to operate and easy to understand
- **Flexibility:** Should be easily adaptive to the changing organizational environment
- **Elasticity:** Should allow for expansion i.e provide for a range or variety of rewards to the worker
- **Productivity:** Should contribute to improved productivity for the both worker and the organization
- **Government legislation:** Should be compliant with the laws and regulations issued by government governing payment of salaries and wages to workers.

QUESTION 7

April 2023 Question One C

Digital Television Ltd. manufactures digital televisions. The main component used in making digital televisions is the fluorescent bulbs. For each digital television

manufactured, 12 bulbs are required. The company manufactures 15,000 digital televisions per year. It costs Sh.200 each time the bulbs are ordered and the carrying cost are Sh.8 per bulb per year.

Required:

- (i) Determine the economic order quantity of bulbs. (3 marks)
- (ii) Calculate the number of times per year the bulbs will be ordered assuming 360 day in a year. (3 marks)

ANSWER

(i) EOQ

$$EOQ = \sqrt{\frac{2DC_0}{C_h}}$$

$$EOQ = \sqrt{\frac{2 \times 15000 \times 200}{8}}$$

= 866 bulbs per order approximate

(ii) Reorder interval

$$\text{Reorder interval} = \frac{\text{Number of days a year}}{\text{Number of orders}}$$

Number of days in a year = 360 days

$$\text{Number of orders} = \frac{\text{Annual demand}}{\text{Order Quantity}} = \frac{15000 \times 12}{866} = 208 \text{ orders}$$

$$\text{Reorder interval} = \frac{360}{208} = 1.73$$

i.e an order should be placed after every 2 days (approx.)

QUESTION 8

April 2023 Question Two

- (a) In the context of labour remuneration, highlight **FOUR** causes of labour turnover.

(4 marks)

- (b) Ezekiel Mutinda, a sole trader, prepares three types of cakes branded HBL1, HBL2 and HBL3 in two production cost centres and two service centres. The production centres are mixing cost centre and baking cost centre while the service centres are distribution department and canteen department.

The following is the budgeted production data and production cost for the year ending 31 December 2023:

	Product		
	HBL1	HBL2	HBL3
Production	3,300 units	7,100 units	1,650 units
	Sh. per unit	Sh. per unit	Sh. per unit
Direct material cost	130	150	160
Direct labour:			
Mixing cost centre	75	60	50
Baking cost centre	90	50	180
Mixing machine hours per unit	6	3	4

The budgeted overheads for the year are as follows:

Department	Mixing	Baking	Distribution	Canteen	Total
Allocated overheads (Sh.)	376,975	243,925	166,000	266,500	1,053,400
Rent and rates					170,000
Depreciation of machine					300,000
					300,000

Additional information:

1. The budgeted overheads for the year are to be allocated on the following basis:

Department	Mixing	Baking	Distribution	Canteen
Net book value of machine (Sh.)	1,500,000	750,000	300,000	450,000
Floor space occupied (square metre)	3,600	1,400	1,000	800

2. Secondary reapportionment is allocated using step-wise method on the following basis:

Service department	Mixing	Baking	Distribution	Canteen
Distribution	70%	30%	-	-
Canteen	55%	45%	-	-

Required:

- (i) An overhead analysis sheet (OAS) showing both primary and secondary apportionment. (4 marks)
- (ii) Total machine hours for mixing cost centre. (2 marks)

- (iii) A machine hour overhead absorption rate (OAR) for mixing cost centre. (2 marks)
- (iv) A rate expressed as a percentage of direct labour cost for the baking cost centre. (4 marks)
- (v) Calculate the budgeted total cost per unit of product HBL1 (4 marks)

ANSWER

- (a) Causes of labour turnover related to labour remuneration.

1. **Inadequate Compensation:** When employees feel that their compensation is not commensurate with their skills, experience, or the value they bring to the organization, they may seek better-paying opportunities elsewhere. Inadequate compensation can lead to dissatisfaction and a higher likelihood of turnover.
2. **Limited Career Advancement Opportunities:** Employees often seek opportunities for growth and advancement in their careers. If they perceive that their current organization does not provide sufficient avenues for career progression, they may be more inclined to leave and find roles that offer better prospects for advancement.
3. **Uncompetitive Benefits:** In addition to salary or wages, employees value comprehensive benefits packages. If an organization offers subpar benefits compared to industry standards or fails to meet the diverse needs of its employees (such as healthcare coverage, retirement plans, flexible work arrangements, or work-life balance programs), it can contribute to higher turnover rates.

4. **Lack of Recognition and Rewards:** Employees thrive on recognition and appreciation for their contributions. When an organization fails to acknowledge and reward employee performance, it can result in decreased motivation and engagement. Employees may seek recognition and rewards by pursuing opportunities in organizations that value and incentivize their efforts.
5. **Unfair Pay Practices:** Pay inequity and disparities can significantly impact employee morale and retention. When employees perceive unfairness in pay practices, such as unequal pay for equal work or gender-based pay gaps, it can lead to dissatisfaction and increase the likelihood of turnover.
6. **Poor Compensation Communication:** Transparent and effective communication regarding compensation practices is crucial for employee satisfaction. If an organization fails to communicate the rationale behind compensation decisions, salary structures, or opportunities for pay increases, it can create uncertainty and dissatisfaction among employees.
7. **Mismatch between Compensation and Workload:** When employees perceive that their compensation does not align with the level of responsibility, workload, or stress associated with their roles, it can lead to feelings of being undervalued or overworked. This imbalance can drive employees to seek better-compensated positions elsewhere.

(b) **Ezekiel Mutinda.**

(i) **An overhead analysis sheet (OAS)**

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Details	Base	Production dep		Service dep		Total
		Mixing	Baking	Distribution	Canteen	
		Sh.	Sh.	Sh.	Sh.	Sh
Allotted OHS	Direct	376,975	243,925	166,000	266,500	1,053,400
Rent and rates	Floor space (18:7:5:4)	90,000	35,000	25,000	20,000	170,000
Depreciation	NBV of machine (10:5:2:3)	150,000	75,000	30,000	45,000	300,000
		616,975	353,925	221,000	331,500	1,523,400
Apportionment of distribution of OHS	70:30	154,700	66,300	(221,000)	0	
Apportionment of canteen OHS	55:45	182,325	149,175	0	(331,500)	
Total		954,000	569,400	0	0	1,523,400

(ii) Total machine hours for mixing cost centre.

Product	Machine hours
HBL1 (3300 × 6)	19,800
HBL2 (7,100 × 3)	21,300
HBL3 (1650 × 4)	6600
Total hours	47,700

- (iii) A machine hour overhead absorption rate (OAR) for mixing cost centre.

$$\begin{aligned} \text{OAR} &= \frac{\text{budgetted production OHS}}{\text{Budgetted machine hours}} \\ &= \frac{95,400}{47,700} \\ &= \text{Sh. 20 per hour} \end{aligned}$$

- (iv) A rate expressed as a percentage of direct labour cost for the baking cost centre.

$$\text{OAR} = \frac{\text{Budgetted production OHS}}{\text{Budgetted direct labour costs}} \times 100\%$$

Product		Direct labour cost
		Sh.
HBL1	(3,300 × 90)	297,000
HBL2	(7100 × 50)	355,000
HBL3	(1650 × 180)	297,000
Total		949,000

$$\begin{aligned} \text{OAR} &= \frac{569400}{949000} \times 100\% \\ &= 60\% \end{aligned}$$

(v) Calculate the budgeted total cost per unit of product HBL1

Product		HBL1
Cost per unit	Sh.	Sh.
Direct material		130
Direct labour:		
Mixing cost center	75	
Baking cost center	<u>90</u>	<u>165</u>
Prime cost		295
Production overheads:		
Mixing cost center (6×20)	120	
Baking cost center ($60\% \times 90$)	<u>54</u>	<u>174</u>
Total cost per unit		<u>469</u>

QUESTION 9

April 2023 Question Three A

Outline FOUR factors influencing stock levels in inventory management. (4 marks)

ANSWER

- Demand Forecasting:** Accurate demand forecasting is crucial for maintaining optimal stock levels. Factors such as historical sales data, market trends, seasonal variations, and customer behavior help determine the expected demand for products.
- Lead Time:** The time it takes for suppliers to deliver goods affects inventory levels. Longer lead times may require higher stock levels to prevent stockouts while waiting for replenishment.

3. **Service Level and Customer Satisfaction:** Inventory levels should be balanced to meet customer demand and ensure high service levels. Maintaining adequate stock prevents stockouts and backorders, leading to satisfied customers.
4. **Cost of Holding Inventory:** Holding inventory incurs costs such as storage, insurance, obsolescence, and capital tied up in stock. Minimizing inventory levels can help reduce these costs, but it must be balanced with avoiding stockouts.
5. **Production and Procurement Costs:** Efficient production and procurement processes impact stock levels. Timely production planning, optimized batch sizes, and effective supplier management can help control inventory levels.
6. **Seasonality and Demand Variations:** Industries with seasonal demand fluctuations must adjust their stock levels accordingly. Anticipating seasonal peaks and valleys helps avoid overstocking or stockouts during critical periods.
7. **Supply Chain Reliability:** The reliability of suppliers and transportation networks influences inventory management. Unreliable suppliers or logistical disruptions can lead to stockouts and the need for higher stock levels as a buffer.
8. **Product Shelf Life:** Perishable or time-sensitive products require careful inventory management to prevent spoilage or expiration. Monitoring expiry dates and implementing first-in, first-out (FIFO) or first-expired, first-out (FEFO) methods is crucial.
9. **Economic Conditions and Market Trends:** External factors like economic conditions, market trends, and regulatory changes can affect inventory levels.

Keeping abreast of industry developments helps adjust inventory levels in response to changing market conditions.

10. Sales and Promotions: Planned sales, promotions, or marketing campaigns can influence inventory levels. Identifying the impact of these events and adjusting stock levels accordingly ensures sufficient supply during peak periods.

QUESTION 10

December 2022 Question One (b)

Highlight **FOUR** benefits of continuous stock taking to a company. (4 marks)

ANSWER

1. The system obviates the need for the physical checking of all items of stock and stores at the end of the year.
2. It avoids the dislocation of the routine activities of the organisation including production and dispatch.
3. A reliable and detailed check on the stores is maintained.
4. Errors, irregularities and loss of stock through other methods are quickly detected and through necessary action recurrence of such things in future is minimised.
5. As the work is carried out systematically and without undue haste the figures are readily available.

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6. Actual stock can be compared with the authorised maximum and minimum levels, thus keeping the stocks within the prescribed limits. The disadvantages of excess stocks are avoided and capitalised up in stores materials cannot exceed the budget.
7. The recorder level of various items of stores are readily available thus facilitating the work of procurement of stores.
8. For monthly or quarterly financial statements like Profit and Loss Account and Balance Sheet the stock figures are readily available and it is not necessary to have physical verification of the balances.
9. To act as a moral and internal check against employees from committing pilferages; that is stealing inventory in terms of small quantities

QUESTION 11

December 2022 Question Three (b)

Bingwa Ltd. operates a premium bonus system where workers receive a guaranteed basic hourly minimum rate of pay plus a bonus of 50% of the time saved.

The following data is provided for the last week of November 2022:

Particulars	Bella	Chali	Dan
Time rate (Sh. per hour)	300	280	320
Units produced	2,500 units	2,200 units	2,600 units
Time allowed for 100 units	2 hours 36 minutes	2 hours 30 minutes	2 hours 30 minutes

Time taken	55 hours	58 hours	54 hours
Rejected units	100 units	40 units	200 units

Additional information:

1. No payment is made beyond the time allowed.
2. The bonus which is paid at the basic hourly rate is applicable to the accepted output only.
3. No penalty is imposed on rejected output.

Required:

From the above information, calculate for each employee:

- (i) Bonus hours and amount of bonus earned. (6 marks)
- (ii) Labour cost for each good unit produced. (4 marks)

ANSWER

(b) (i) Bonus hours and amount of bonus each for each employee

Employee	Bella hours	Chali hours	Dan hours
Time Allowed	$\left[\frac{(2500 - 100)156}{100 \times 60} \right]$	$\left[\frac{(2200 - 40)150}{100 \times 60} \right]$	$\left[\frac{(2600 - 200)150}{100 \times 60} \right]$
	= 62.4	= 54	= 60
Less time taken	55	58	54
Bonus hours	7.4	0	6

$$\begin{array}{lclcl} \text{Bonus} & (7.4 \times \frac{1}{2} \times 300) = 1110 & (0 \times \frac{1}{2} \times 280) = 0 & (6 \times \frac{1}{2} \times 320) = & \\ & & & & 960 \end{array}$$

(ii) Labor cost for each good unit produced.

Employee	Bella	Chali	Dan
	Sh.	Sh.	Sh.
Basic wage	$(55 \times 300) = 16500$	$(58 \times 280) = 16240$	$(54 \times 320) = 17280$
Bonus	1110	0	960
Total pay	$\begin{array}{r} 17610 \\ \hline 2400 \\ \hline \text{Sh.7.34} \end{array}$	$\begin{array}{r} 16240 \\ \hline 2160 \\ \hline \text{Sh.7.52} \end{array}$	$\begin{array}{r} 18240 \\ \hline 2400 \\ \hline \text{Sh.7.60} \end{array}$

QUESTION 12

August 2022 Question One

(a) Explain the following terms as used in inventory management system:

- (i) Perpetual inventory system. (2 marks)
- (ii) Periodic inventory system. (2 marks)

(b) The following information relates to store receipts and issue of material R in a small manufacturing enterprise for the month of April 2022:

- April:1 Opening inventory 4,000 units at Sh100 per unit.
- 4 Issued 3,000 units.
- 5 Purchased 9,000 units at Sh.120 per unit.

- 9 Issued 3,200 units.
- 12 Returned to stores 2,000 units (from the issue of 4 April 2022).
- 15 Purchased 4,800 units at Sh.130 per unit.
- 18 Returned to supplier 400 units out of the quantity received on 5 April 2022.
- 25 Purchased 2,000 units at Sh.140 each.
- 28 Issued 4,200 units.
- 29 Purchased 2,400 units at Sh.150 per unit.
- 30 Issued 5,600 units

It is the company's policy to use the weighted average method when valuing the materials issued.

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Required:

Store ledger account for the month of April 2022. (10 marks)

- (c) Turkwes Ltd. manufactures men suits for local market. Jobs are allocated to two operators; Njogu and Mabili with bonus paid for hours saved.

In the month of July 2022, Njogu made 100 units while Mabili made 105 units for which the time allowed of 60 standard minutes and 50 standard minutes per unit respectively was credited.

Additional information:

1. The basic wage rate was Sh.360 per hour for both employees.
2. For every hour saved, a bonus was paid at the rate of 25% of the basic wage rate.
3. Hours worked in excess were paid at the basic wage rate plus two thirds.
4. Njogu completed his job in 88 hours while Mabili completed his job in 78 hours.
5. A basic working week has 80 hours.

Required:

For each operator, determine:

- | | |
|--------------------------------|-----------|
| (i) Amount of bonus payable. | (2 marks) |
| (ii) Total gross wage payable. | (2 marks) |
| (iii) Wage cost per unit. | (2 marks) |

ANSWER

a) Terms as used in inventory management system.

(i) Perpetual inventory system:

Is a system of inventory count involving checking counting of inventory items hold by a firm on a regular or continuous basis

(ii) Periodic inventory system:

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Is a system of inventory count whereby inventory items are checked and counted at the end of an accounting period rather than on regular basis.

b) Store Ledger Account for the month of April 2022 using weighted average method

DATE	RECEIPTS			ISSUES			BALANCE		
2022	Qty	Price	Amount	Qty	Price	Amount	Qty	Price	Amount
APRIL	units	Sh.	Sh.	units	Sh.	sh.	units	sh.	Sh.
1							4,000	100	400,000
4				3000	100	300,000	1,000	100	100,000
5	9000	120	1,080,000				10,000	118	1,180,000
9				3200	118	377,600	6,800	118	802,400
12	2000	100	200,000				8,800	114	1,002,400
15	4800	130	624,000				11,600	140	1,626,400
18				400	118	47,200	11,200	141	1,579,200
25	2000	140	280,000				13,200	141	1,859,200
28				4200	141	592,200	9,000	141	1,267,000
29	2400	150	360,000				11,400	143	1,627,000
30				5600	143	800,800	5,800	142	8,262,000

c) For each operator, determine:

i) Amount of bonus payable

Bonus = Hours saved $\times$ hourly rate

Hours saved = Hours Allowed – Hours worked

Worker	Njogu	Mabili
Hours Allowed	$\frac{100 \times 60}{60} = 100$	$\frac{105 \times 50}{60} = 87.5$
Hours worked	88	78
Bonus Hours	12	9.5
Bonus rate (25% of basic wage rate)	80 (25% $\times$ 360)	80 (25% $\times$ 360)
Amount of bonus paid(sh.)	960	760

ii) The gross wage payable

Gross wage = Basic wage + bonus + overtime wage

Details	Worker	Njogu	Mabili
		Ksh.	Ksh.
Basic wage	(80 $\times$ 360) = 28,800	(80 $\times$ 360) = 28,800	
Bonus	960	760	
Overtime	$\left[(88 - 80) 360 \times 1 \frac{2}{3} \right] = 4800$	$\left[(78 - 80) 360 \times 1 \frac{2}{3} \right] = 0$	
Gross wage	34,560	29,560	

iii) **Wage cost per unit**

$$= \frac{\text{Gross wage}}{\text{Output units}}$$

Worker	Njogu	Mabili
Wage cost per unit (sh.)	$= \frac{34560}{100}$	$= \frac{29560}{105}$
	= Sh.345.60	= Sh.281.52

QUESTION 13

April 2022 Question Two (a)

Discuss four circumstances under which time-based labour remuneration system is deemed to be more appropriate than the output based system. (8 marks)

ANSWER

- When productivity of an employee cannot be measured precisely.
- Where quality of products is more important than the quantity produced.
- Where individual employees do not have any control over production.
- Where close supervision of work is possible.
- Where work delays are frequent and beyond the control of workers.

QUESTION 14

December 2021 Question one (b)

Usenge Products Ltd. manufactures and retails products A, B and C.

The company has 120 workers who work under a group bonus scheme. The workers are categorised into three grades and are paid a bonus of the excess of time allowed over time taken.

The bonus paid is 80% of the workers' base rate and is shared by the workers in the proportion of time spent on the job. The following production data has been extracted from the company's records for the month of November 2021.

Product	Units produced	Time allowed per unit (Minutes)
A	640	63
B	1,280	120
C	2,400	100

Grade of worker	Number of direct workers	Basic rate per hour	Hours worked per worker
1	40	300	30
2	16	270	64
3	64	240	50

Required:

- (i) Percentage of hours saved to hours taken. (3 marks)
- (ii) Bonus due to the group. (3 marks)
- (iii) Gross earnings due to the group. (4 marks)

ANSWER

(i) Percentage of hours saved to hours taken.

Product	Output	Time allowed	Total
A	640	63	40,320
B	1280	120	153,600
C	2400	100	<u>240,600</u>
			<u>433,920</u>

1 hour = 60 mins

? hour = 433,920

$$\frac{433,920}{60} \times 1 = 7,232 \text{ hours}$$

Hours worked

$$= (40 \times 30) + (16 \times 64) + (64 \times 50)$$

$$= 1200 + 1024 + 3200$$

$$= 5,424 \text{ hours}$$

Hours saved

$$= 7232 - 5424$$

$$= 1808 \text{ hours}$$

$$\% = \frac{1808}{5424} \times 100\% = 33.33\%$$

(ii) Bonus due to the group.

Hour saved per grade

$$\text{Grade 1} = \frac{1200}{5424} \times 1808 = 400$$

$$2 = \frac{1024}{5424} \times 1808 = 341$$

$$3 = \frac{3200}{5424} \times 1808 = 1,067$$

Bonus due to group

$$= (400 \times 0.8 \times 300) + (341 \times 0.8 \times 270) + (1067 \times 0.8 \times 240)$$

$$= 96,000 + 73,656 + 204,864$$

$$= \text{Sh. } 374, 520$$

(iii) Gross earnings due to the group

$$= (1200 \times 300) + (1024 \times 270) + (3200 \times 240) + 374,520$$

$$= 360,000 + 276,480 + 768,000 + 374,520$$

$$= \text{Sh. } 1,779,000$$

QUESTION 15

September 2021 Question Three B

Fanaka Enterprises uses economic order quantity (EOQ) model to establish the re-order quantity of raw material "Y". The company hold no buffer stock.

The following information relates to raw material "Y":

Annual usage 48,000 units

Purchase price Sh.80 per unit

Ordering costs	Sh.120 per order
Annual holding costs	10% of the purchase price

The company's supplier of raw material "Y" has offered a discount of 1% of the purchase price if each order placed is for 2,000 units.

Required:

- (i) Economic order quantity (EOQ) of raw material "Y". (1 mark)
- (ii) Advise the management of the company on whether to accept or decline the offer. (5 marks)

ANSWER

Fanaka Enterprises

Required:

- (i) Economic order quantity (EOQ) of raw material "Y".

$$\begin{aligned} & \sqrt{\frac{2AO}{HO}} \\ &= \sqrt{\frac{2 \times 48,000 \times 120}{8}} \\ &= 1,200 \text{ units} \end{aligned}$$

(ii) **Advice**

$$\text{Total cost} = \left(\frac{48,000 \times 120}{1200} \right) + (80 \times 4,800) + \left(\frac{1,200 \times 8}{2} \right)$$

$$4,800 + 3,540,000 + 4,800$$

$$= \text{Sh. } 3,849,600$$

$$\text{Discount } \frac{99}{100} \times 80 = \text{Sh } 79.20$$

$$\frac{10}{100} \times 79.20 = \text{Sh. } 7.92$$

$$\text{Total cost} = \left(\frac{48,000 \times 120}{2,000} \right) + (79.20 \times 48,000) + \left(\frac{2,000 \times 79.20}{2} \right)$$

$$= 2,880 + 3,801,600 + 7,920$$

$$= \text{Sh. } 3,812,400$$

The company should accept the offer because the total cost reduces

QUESTION 16

May 2021 Question One C

Lenvo Ltd. manufactures three products namely; A, B and C

The following data relates to the three products:

	Product		
	A	B	C
	Sh.	Sh.	Sh.
Selling price per unit	250	320	460
Production cost per unit:			
Variable overheads	16	20	28

Installation labour	24	32	44
Manufacturing labour	40	55	70
Raw materials	70	110	155

Additional information:

1. Highly skilled labour is required for installation of the three products in the customer's premises. A maximum of 25,000 hours of highly skilled labour are currently available at Sh.8 per hour during the production period.
2. Fixed costs for the production period are Sh.450,000.
3. The maximum demand for Products A, B and C is 2,000 units, 3,000 units and 1,800 units respectively.

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Required:

- (i) The current shortfall in highly skilled labour at maximum demand (4 marks)
- (ii) The optimal production mix. (4 marks)
- (iii) The resultant profit at the optimal production mix. (2 marks)

ANSWER

i) Establishing limiting factor

$$A = \frac{24}{8} \times 2,000 = 6000 \text{ hours}$$

$$B = \frac{32}{8} \times 3,000 = 12000 \text{ hours}$$

$$C = \frac{44}{8} \times 1800 = 9900 \text{ hours}$$

$$\text{TOTAL} = 27,900 \text{ hours}$$

$$\text{Short fall} = 27,900 - 25,000 = 2,900 \text{ hours}$$

ii)

	A	B	C
	Sh.	Sh.	Sh.
Selling price per unit	250	320	460
Variable cost per unit	<u>150</u>	<u>217</u>	<u>297</u>
Contribution per unit	<u>100</u>	<u>103</u>	<u>163</u>

Rank production

Contribution per unit	100	103	163
Limiting factor per unit	3	4	5.5
Contribution / limiting factor	33.33%	25.75%	29.64%
Per unit	1	3	2

Rank	Produce
1. A = $3 \times 2000 = 6000$	A = 2000 units
2. C = $5.5 \times 1800 = 9,900$	B = 2,275 units
3. B = $4 \times 2,275 = 9,100$	C = 1800 units
TOTAL= 25,000	

iii) Total sales

$$= (2,000 \times 250) + (2,275 \times 320) + (1800 \times 460) = 2,056,000$$

Total variable cost

$$= (2,000 \times 150) + (2,275 \times 217) + (1800 \times 297) = 1,328,275$$

Sales	2,056,000
Variable cost	<u>(1,328,275)</u>
Contribution	727,725
Fixed cost	<u>(450,000)</u>
Profit	<u><u>277,725</u></u>

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QUESTION 17

May 2021 Question Three B

Bix Ltd, re-apportions the costs incurred in two service cost centres namely; materials handling and inspection to the three production cost centres of machining, finishing and assembly.

The following are the overhead costs which have been allocated and apportioned to the five cost centres:

	Ksh. "Million"
Machining	400
Finishing	200

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Assembly	100
Materials handling	100
Inspection	50

Estimates of the benefits received by each cost centre are as follows:

	Machining	Finishing	Assembly	Materials Handling	Inspection
	(%)	(%)	(%)	(%)	(%)
Materials Handling	30	25	35	-	10
Inspection	20	30	45	5	-

Required:

Calculate the charge for overhead to each of the three production cost centres, including the amounts reapportioned from the two service centres using:

- (i) The continuous allotment (repeated distribution) method. (7 marks)
- (ii) The algebraic method. (7 marks)

ANSWER

(i) Continuous allotment (repeated distribution) method

Departments

	Machining —million—	Finishing —million—	Assembly —million—	Material handling —million—	Inspection —million—
Total	400	200	100	100	50
Overhead of	30	25	35	(-100)	10

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material H apportioned					
Overhead of inspection apportioned	12	18	27		(-60)
Over head of M.H. apportioned	0.9	0.75	1.05	3	0.3
Overhead of inspection apportioned	0.06	0.09	0.135	(-3)	(-0.3)
Overhead of M.H apportioned	0.0045	0.00375	0.00525	0.015	0.0015
Overhead of inspection apportioned)	0.0003	0.00045	0.000675	(-0.015)	(-0.0015)
Overhead of M.H. apportioned	0.000225	0.0001875	0.0002625	(-0.00075)	0.000075
Overhead of inspection apportioned	0.000015	0.0000225	0.00003375	(0.00000375)	(-0.000075)
Overhead of M.H. apportioned	0.000001 25	0.0000009375	0.0000013125	(- 0.00000375)	0.00000375
	442.9648	243.8443	163.1910	-	-

Let x be total overhead of material handling

Let y be total overhead of inspection

$$x = 100 + 0.05 y$$

$$y = 50 + 0.1x$$

$$X = 100 + 0.05(50 + 0.1x)$$

$$X = 100 + 2.5 + 0.005x$$

$$\frac{0.995x}{0.995} = \frac{102.5}{0.995}$$

$$X = 103.0151$$

$$Y = 50 + 0.1 (103.0151)$$

$$Y = 60.3015$$

(ii) The algebraic method

Departments

	Machining —million—	Finishing —million—	Assembly —million—	Material handling —million	Inspection —million—
Total	400	200	100	100	50
expense of x	$\frac{30.9045}{430.9045}$	$\frac{25.7538}{225.7538}$	$\frac{36.0553}{136.0553}$	$\frac{(-103.0151)}{-3.0151}$	$\frac{10.3015}{60.3015}$
expense of y	$\frac{12.0603}{442.9648}$	$\frac{18.9905}{243.8443}$	$\frac{27.1357}{163.1910}$	$\frac{3.0151}{=}$	$\frac{(-60.3015)}{=}$

Opening W.I.P	4800
Transfer from process II	30,600
Closing W.I.P	(5,400)
	30,000

$$\text{Normal loss} = \frac{10}{100} \times 300,000 = 3,000 \text{ units}$$

Unit scrapped = 2400 units

Abnormal gain = 600 units

QUESTION 18

May 2021 Question Four

The following information is available for Process II of Winam Fabrications Ltd. for the month of September 2020:

			Opening stock: 4,800 units valued
Degree of completion:	Materials	70%	at Sh. 165,000
	Labour	60%	
	Overheads	60%	

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Additional information:

1. Transfer from Process I amounted to 30,600 units valued at Sh.306,000.
2. Additional costs incurred in Process II include:

	Sh.
Direct materials	134,400
Direct labour	394,200
Production overheads	525,600

3. The units scrapped amounted to 2,400 units with the following degree of completion:

Materials	100%
Labour	70%
Overheads	70%

4. The closing stock was 5,400 units with the following degree of completion:

Materials	60%
Labour	40%
Overheads	40%

5. Transfer to Process III amounted to 27,600 units.
6. There was a normal loss of 10% of production in the process.
7. The units scrapped were realised at Sh. 10 per unit.

Required:

- (a) Statement of equivalent production. (8 marks)
- (b) Cost of equivalent unit for each element of cost. (6 marks)
- (c) Process II account using the First-in-First Out (FIFO) method. (6 marks)

ANSWER

i) Statement of production

Element of cost	Total effective units				
	Fully complete	Losing W.I.P	Abnormal gain	Opening W.I.P	
Material	27,600	+ 5400	- 600	- 4,800	= 27,600
Direct material	27,600	+3,240	- 600	- 3360	= 26,880
Direct labor	27,600	+ 2160	- 600	- 2880	= 26,280
Overheads	27,600	+ 2160	- 600	- 2880	= 26,280

ii) Statement of cost

Element of cost	Total cost (sh.)	Total equivalent units (sh.)	Cost per unit (sh)
Material	27,600	27,600	10
Direct material	134,400	26,880	5
Direct labor	394,200	26,280	15
Overheads	<u>525,600</u>	26,280	<u>20</u>
	<u>1,330,000</u>		<u>50</u>

iii) Process III account

	Units	Cost		Unit	Cost
Opening W.I.P	4800	165,000	Normal loss	3,000	30,000
Process II a/c	30,600	306,000	Process III	27,600	1,379,400
Direct material		134,400	Closing W.I.P	5,400	145,800
Direct labor		394,200			
Production overheads		525,600			
Abnormal gain	600	30,000			
	<u>36,000</u>	<u>1,555,200</u>		<u>36,000</u>	<u>1,555,200</u>

QUESTION 19

November 2020 Question Two B

A company uses two methods to remunerate its casual workers as follows:

- **Piece rate with guaranteed time rate**

The company pays its casual workers Sh.25 for every good output produced by them. Any spoilt output is paid at the rate of Sh.10 and a penalty of 8% is charged based on the rate of the good production. The employees are guaranteed a minimum monthly pay of Sh.8,000.

- **Differential piece rate**

An employee is compensated on piece rate basis and the following schedule is applied to determine his or her remuneration:

Number of units unit	Rate of wages per Sh.
1 - 250	15
251 – 500	20
501 -1,000	25
Over 1,000	30

Spoilt units are deducted from the first production, paid at the rate of Sh.10 per unit and a penalty of 8% applied at the differential rate of the first production.

Three employees of the company produced the following number of units during the month of March 2020:

	Number of units produced	Spoilt units
Employee		
Amboga	2,000	200
Banyala	1,800	100
Charlie	1,650	50

Required:

- (i) Determine the wages payable to each employee under the two labour remuneration methods. (9 marks)
- (ii) Advise each employee on the best labour remuneration method to accept based on your computations in b (1) above. (3 marks)

ANSWER

(i) Labour remuneration

1. Wages payable to Amboga under piece rate with guaranteed time rate

$$\begin{aligned}
 &= 8000 + (1,800 \times 25) + (200 \times 10) - \left(\frac{8}{100} \times 25 \times 200\right) \\
 &= 8,000 + 45,000 + 2,000 - 400 \\
 &= \text{Ksh. } 46,600 + 8,000 \\
 &= \text{Ksh. } 54,600
 \end{aligned}$$

2. Wages payable to Amboga under differential piece rate

$$\begin{aligned}
 &= (50 \times 15) + (200 \times 10) + (250 \times 20) + (500 \times 25) + (1,000 \times 30) - \left(\frac{8}{100} \times 15 \times 200\right)
 \end{aligned}$$

$$\begin{aligned} &= 750 + 2,000 + 5,000 + 12,500 + 30,000 - 240 \\ &= \text{Ksh. } 50,010 \end{aligned}$$

3. Wages payable to Banyala under piece rate with guaranteed time rate

$$\begin{aligned} &= 8,000 + (1,700 \times 25) + (100 \times 10) - \left(\frac{8}{100} \times 25 \times 100\right) \\ &= 8,000 + 42,500 + 1,000 - 200 \\ &= \text{Ksh. } 43,300 + 8,000 \\ &= \text{Ksh. } 51,300 \end{aligned}$$

4. Wages payable to Banyala under differential piece rate

$$\begin{aligned} &= (150 \times 15) + (100 \times 10) + (250 \times 20) + (500 \times 25) + (800 \times 30) - \\ &\quad \left(\frac{8}{100} \times 15 \times 100\right) \\ &= 2,250 + 1,000 + 5,000 + 12,500 + 24,000 - 120 \\ &= 22,250 + 24,000 - 120 \\ &= 44,750 - 120 \\ &= 44,630 \end{aligned}$$

5. Wages payable to Charlie under piece rate with guaranteed time rate

$$\begin{aligned} &= 8,000 + (1,600 \times 25) + (50 \times 10) - \left(\frac{8}{100} \times 25 \times 50\right) \\ &= 8,000 + 40,000 + 500 - 100 \\ &= \text{Ksh. } 48,400 \end{aligned}$$

6. Wages payable to Charlie under differential piece rate

$$(200 \times 15) + (250 \times 20) + (500 \times 25) + (650 \times 30) + (50 \times 10) - \left(\frac{8}{100} \times 15 \times 50 \right)$$

$$= 3,000 + 5,000 + 12,500 + 19,500 + 500 - 60$$

Ksh 40,440

(ii)

- For Amboga, best remuneration method is the differential piece rate system because it gives highest wage.
- For Banyala, best remuneration method is the differential piece rate with guaranteed time rate because it gives the highest pay
- For Charlie, best remuneration method is the differential piece rate with guaranteed time rate

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QUESTION 20

November 2019 Question Three B

Supreme Ltd. is a company that specialises in making high quality furniture to customers' orders. The company has three production departments and two service departments.

Budgeted overhead costs for the year ending 30 April 2020 are as follows:

Sh. "000"

Rent and rates	12,800
----------------	--------

Machine insurance	6,000
Telephone charges	3,200
Depreciation	18,000
Production supervisor's salary	24,000
Heating and lighting	<u>6,400</u>
	<u>70,400</u>

The three production departments A, B and C and the two service departments X and Y are housed in new premises, the details of which, together with other statistics and information are provided below:

	Department				
	A	B	C	X	Y
Floor area occupied (square metres)	3,000	1,800	600	600	400
Machine value (Sh. "000")	240	100	80	40	20
Direct labour hours ("000")	3,200	1,800	1,000		
Labour rate per hour (Sh.)	380	350	340	300	300
Allocated overheads specific to each department ("000")	2,800	1,700	1,200	800	600
Service department X costs apportioned	50%	25%	25%		
Service department Y costs apportioned	20%	30%	50%		

Required:

- (i) Overheads analysis sheet showing the overhead costs budgeted for each department and the basis of apportionment used. (8 marks)
- (ii) Two pieces of furniture are to be manufactured for customers. The following information relates to the two pieces of furniture:

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	Job 123	Job 124
Direct materials (Sh.)	15,400	10,800
	Hours	Hours
Direct labour - Department: A	20	16
B	12	10
C	10	14

Required:

The total production cost for each job. (4 marks)

ANSWER

Supreme ltd									
Overheads Analysis sheet									
Off	Base	Amount	Unit of base	V/ Cost	A	B	C	X	Y
Rent & rates	Area (m ²)	12800	6400	2/m ²	6000	3600	1200	1200	800
Machine insurance	Machine value (sh)	6000	480,	12.5	3000	1250	1000	500	250
Telephone wages	Labour rates/hr	3200	1670	1.962	728.16	670.67	651.51	574.86	574.86
Depreciation	Machine value (sh)	18000	480	37.5	9000	3750	3000	1500	750
Production s. Salary	Direct labour(hr)	24000	6000	4	12800	7200	4000		
Heating and lighting	Floor area (m2)	6400	6400	1.	3000	1800	600	600	400
Allocated off	-				2800	1700	1200	800	600
PRIMARY	TOTALS				37328.18	19970.67	11651.15	5174.86	3374.86

Overheads apportionment using direct method						
Details	A	B	C	X	Y	
Primary total	37328.18	19970.67	11651.15	5174.86	3374.86	
Apportion Dep. Y	674.972	1012.46	1687.43	-	(3374.86)	2:3:5
Apportion Dep X	2587.43	1293.72	1293.72	(5174.86)	-	5:25:25
Total budgeted others	40590.56	22276.85	14632.66	0	0	

ii) Total Production cost for each job

Dept	Job 123	Job 124
Materials	15400	10800
Labour A	20×380=5600	16×380=6080
B	12×350=4200	10×350=3500
C	10×340=3400	14×340=4760
Budgeted off A	20295.28	20295.28
B	11138.42	11138.42
	7316.33	7316.33
Total cost/Job	69350.0312	63890.03

QUESTION 21

May 2019 Question Three A

Baraka Distributors Ltd. purchases and sells a single product branded "M".

The following information is provided for product M:

1. Annual demand for the product is 30,000 units.
2. The ordering cost per order is Sh.2,500.
3. The holding cost is expressed as 20% of the purchase price.

4. A new supplier in the market has presented Baraka Distributors Ltd. with a proposal for the following range of quantities and respective price per unit:

Range of quantities	Price (Sh.)
1 — 3,000	21
3,001 — 5,000	19
5,001 — 7,000	17
7,001 — 9,000	15.50
9,001 — 10,000	13

Required:

Advise the management of Baraka Distributors Ltd. on the range of quantities to purchase. (8 marks)

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ANSWER

Advising the management of Baraka Distributors Ltd. on the range of quantities to purchase

$$Total\ Cost = \frac{Q}{2}ch + \frac{D}{Q}C_0 + Purchase\ cost$$

Where : $Q \rightarrow$ Quantity ordered

$Ch \rightarrow$ Holding cost per unit

$C_0 \rightarrow$ Ordering cost

Total cost range 1 – 3,000

$$\begin{aligned} TC &= \left(\frac{3,000}{2} \times 0.2 \times 21 \right) + \left(\frac{30,000}{3,000} \times 2,500 \right) + 21 \times 30,000 \\ &= 6,300 + 2,500 + 630,000 \\ &= Sh. 661,300 \end{aligned}$$

Total Cost range 3001 – 5000

$$\begin{aligned} &= \frac{5,000}{2} \times 0.2 \times 19 + \frac{30,000}{5,000} \times 2,500 + 19 \times 30,000 \\ &= 9500 + 15000 + 57000 \\ &= Sh 594,500 \end{aligned}$$

Total cost range 5001 – 7000

$$\begin{aligned} &= \frac{7,000}{2} \times 0.2 \times 17 + \frac{30,000}{7,000} \times 2,500 + 17 \times 30,000 \\ &= 11,900 + 10,714.29 + 510,000 \\ &= Sh 532,614.29 \end{aligned}$$

Total cost range 7001 – 9000

$$\begin{aligned} &= \frac{9,000}{2} \times 0.2 \times 15.50 + \frac{30,000}{9,000} \times 2,500 + 15.50 \times 30,000 \\ &= 13,950 + 8,333.33 + 465,000 \\ &= sh 487,283.33 \end{aligned}$$

Total cost range 9001 = 10000

$$\begin{aligned} &= \frac{10,000}{2} \times 0.2 \times 13 + \frac{30,000}{10,000} \times 2,500 + 13 \times 30,000 \\ &= 13,000 + 7,500 + 390,000 = Sh. 410,500 \end{aligned}$$

Advice

Management should order between 90001-10000 units because it has the lowest total cost

QUESTION 22

May 2019 Question Three A

The choice of an overhead absorption base is a matter of personal judgement.

Explain the extent to which you agree or disagree with the above statement. (4 marks)

ANSWER

Agree or disagree that the choice of an overhead absorption base is a matter of personal judgment

I Agree: Different bases will result to different cost allocation however, it's important that base used be able to capture unique characteristic of specific cost centre.

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QUESTION 23

November 2018 Question One B

Nduro Ltd. has two production departments: MM and NN and two service departments;

PP and QQ. For the month of

August 2018, the budgeted hours and costs were as follows:

Department	Hours	Cost (Sh.)
MM	1,800	45,000
NN	5,400	54,000

Additional information:

1. The service department costs are apportioned to the production departments as follows:

Department			
MM	NN	PP	QQ
PP	50%	20%	30%
QQ	40%	40%	20%

2. The overheads of the production departments are absorbed into product cost using a rate per hour.

3. During the month of August 2018, the actual activity levels and costs were as follows:

Department	Hours	Costs (Sh.)
MM	1,980	43,200
NN	6,120	52,200
PP		10,800
QQ		7,200

Required:

- (i) The overheads to be charged to the production departments. (8 marks)
- (ii) The amount of under or over absorption in each production department. (6 marks)

ANSWER

- (i) Overhead to be charged to the production departments**

		Production		Service			Total
	Details	Base	MM Sh.	NN Sh.	PP Sh.	QQ Sh.	
1.	Direct overheads allocated	Direct	43200	52200	10800	7200	113400
2.	Apportionment of overhead of PP	50:20:30	5400	2160	(10800)	3240	
3.	Apportionment of overheads of AA	40:40	5220	5220	-	(10440)	
	Total		53,820	59,580	0	11	113400

ii) The amount of under or over absorption in each production department

$$\text{Overhead absorption rate} = \frac{\text{budgeted overheads}}{\text{budgeted base}}$$

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Production departments	OAR
MM	45,000 ÷ 1,800 = 25
NN	54,000 ÷ 5,400 = 10

Department	Budgeted /Absorbed overheads Sh.	Actual overheads Sh.	Over (under) Sh.
MM	1,980 × 25 = 49,500	53,820	(4,320)
NN	6,120 × 10 = 61,200	59,580	1,620

QUESTION 24

November 2018 Question Five D

Production overhead is also known as factory overhead or manufacturing overhead.

With reference to the above statement, outline six examples of production overheads.

(6 marks)

ANSWER

Examples of production overheads

- Consumables stores e.g materials used in negligible amounts
- Wages of non-productive personnel in the production department e.g. foreman
- Rent of factory
- Rates and insurance of factory
- Property taxes
- Maintenance and repairs of production equipment and heat and light
- Depreciation manufacturing facilities

QUESTION 25

May 2018 Question One B

XYZ Ltd. manufactures a component branded "zed" at the rate of 4,000 units per week.

Demand for the component is 2,000 units per week while the production set up cost is

Sh.50 per batch. The accountant has provided the holding cost per unit per annum as

Sh.0.001.

Assume a 50-week year.

Required:

- (i) Economic Batch Quantity (EBQ) for the company. (3 marks)
- (ii) Determine the relevant costs for the EBQ in (b) (i) above. (3 marks)

ANSWER

i). Economic batch quantity (EBQ)

$$EBQ = \sqrt{\frac{2RS}{\left(1 - \frac{U}{P}\right) Ch}}$$

Where: $R = \text{annual demand} = 2000 \times 50 = 100,000$

$S = \text{set up cost per batch} = \text{sh. } 50$

$U = \text{usage rate} = 2000 \text{ units weekly}$

$P = \text{production rate} = 4000 \text{ units weekly}$

$Ch = \text{annual holding cost} = 0.001$

$$EBQ = \sqrt{\frac{2 \times 100,00 \times 50}{\left(1 - \frac{2000}{4000}\right) 0.001}}$$

$$= \sqrt{\frac{10,000,000}{0.0005}} = 141,421.3562 \text{ UNITS}$$

ii) Total cost (TC)

$$TC = \frac{RS}{Q} + \frac{Q}{2} \left(1 - \frac{U}{P} \right) ch$$

$$= \left[\frac{100,000}{141,421.3562} \times 50 \right] + \frac{141,421.3562}{2} \left(1 - \frac{2000}{4000} \right) 0.001$$

$$= 35.3553 + 35.3553$$

$$= sh. 70.7107$$

QUESTION 26

May 2018 Question Three A

Savanah Company is highly automated and uses computers to control manufacturing operations. The company uses job order costing system and applies manufacturing overhead costs to products on the basis of computer hours.

The following estimates were used in preparing predetermined overhead rates at the beginning of the financial year ended 31 March 2018.

Computer hours	85,000
Fixed manufacturing overhead costs	Sh.1,275.000
Variable manufacturing overhead per computer-hour	Sh.3.0

During the year, a severe economic recession resulted in cutting back production and a buildup of inventory in the company's warehouse. The company's cost records disclosed the following actual costs and operating data for the year ended 31 March 2018:

Computer hours	60,000
----------------	--------

Sh.

Manufacturing overhead costs	1,350,000
------------------------------	-----------

Cost of goods sold	2,800,000
--------------------	-----------

Inventories at the year-end:

Raw materials	400,000
---------------	---------

Work-in-progress	160,000
------------------	---------

Finished goods	1,040,000
----------------	-----------

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Required:

(i) Compute the company's predetermined overhead absorption rate for the year.

(3 marks)

(ii) Compute under-applied or over-applied overhead cost for the year. (4 marks)

(iii) It is the policy of the company to allocate any under or over-applied overheads to cost of goods sold.

Determine the cost of goods sold to be charged to the income statement. (3 marks)

ANSWER

i) Fixed overhead absorption

$$\begin{aligned} &= \frac{\text{Fixed manufacturing overheads costs}}{\text{Budget hours}} \\ &= 1275000 \div 85000 \\ &= \text{Sh. } 15 \end{aligned}$$

ii) Under applied or over applied overhead cost.

Actual manufacturing overhead costs = sh.1,350,000

Absorbed manufacturing overheads = 6000 × 15

$$= \text{Sh. } 900,000$$

Under absorbed / under applied overheads

$$\begin{aligned} &= \text{Absorbed overheads} - \text{Actual overheads incurred} \\ &= 900,000 - \text{Sh. } 1,350,000 \\ &= \text{Sh. } 450,000 \end{aligned}$$

iii) Cost of sales to be charged in income statement.

*Production = cost of goods sold + closing stock finished goods
+ closing stock work in progress.*

$$= 2800\,000 + 1040000 + 160000 = 400\,000 (\text{understated})$$

Portion of under applied overheads to be added to cost of goods sold

$$\begin{aligned} &= \frac{\text{Cost of goods sold}}{\text{Production Cost}} \times \text{Under Applied Overheads} \\ &= \frac{2\,800\,000}{4\,000\,000} \times 450,000 = 315,000 \end{aligned}$$

$$\begin{aligned}\text{Adjusted cost} &= \text{Cost of sales} + \text{Apportioned under applied overheads} \\ &= 2800\,000 + 315\,000 \\ &= \text{Sh. } 3,115,000\end{aligned}$$

QUESTION 27

May 2018 Question Four B

Karibu Cottages Ltd. operates three types of suites for its customers namely; Standard, Deluxe and Luxury. The following information is provided:

1. The number of suites of each type are:

Standard 100

Deluxe 30

Luxury 20

2. The rent of Deluxe suite is to be fixed as 1 1/2 times the standard suite and that of Luxury as twice the standard suite.

3. The occupancy level for each suite is as follows:

	Peak season	Off peak season
Standard suites	90%	50%
Deluxe suites	80%	20%
Luxury suites	60%	20%

4. The expenses are as follows:

- Room attendant wages per day when occupied:

Suite	Peak season	Off peak season
Sh.	Sh.	
Standard	20	30
Deluxe	30	45
Luxury	40	60

- Lighting, heating and power for full month, when occupied is as follows:

Suite	Lighting (Sh.)	Power (Sh.)
Standard	400	200
Deluxe	600	300
Luxury	800	400

- Other costs (annual):

	Sh.
Staff salaries	2,200,000
Repairs and renovations	420,000
Linen and laundry	450,000
Interior decorations	500,000
Sundries	315,500

- Annual depreciation is charged on a straight line basis as follows:

Asset	Cost of asset (Sh.)	Rate per annum (%)
Building	14,000,000	5
Furniture and fixtures	1,000,000	10
Air conditioners	2,000,000	10

5. Peak season. is assumed to be 7 months and off-peak season 5 months in a year. One month is taken to have 30 days.

6. Profit including interest on investment is 25% on cost.

Required:

Advise on the amount of rent to be charged for each type of suite per day. (12 marks)

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ANSWER

Amount of rent to be charged for each type of suite per day

Standard suite

$$\text{Off peak season} = \frac{50}{100} \times 100 = 50$$

$$\text{Peak season} = 0.9 \times 100 = 90$$

$$\text{Peak season days} = 30 \times 7 = 210 \text{ days}$$

Standard cost specific			
	Peak season	Off peak	Total
Room attendant wages	$90 \times 20 \times 210 = 378,000$	$50 \times 3 = 150 = 225,000$	603,000
Lighting	$90 \times 400 \times 7 = 252,000$	$50 \times 400 \times 5 = 100,000$	352,000

Power	$90 \times 200 \times 7 = 126,000$	$50 \times 200 \times 5 = 50,000$	176,000
Total costs	<u>756,000</u>	<u>375,000</u>	<u>1,131,000</u>

Deluxe

Occupied suites season = $0.8 \times 30 = 24$

Occupied suites off peak season = $0.2 \times 30 = 6$

Specific costs deluxe			
	Peak season	Off peak	Total
Room attendant wages	$30 \times 210 \times 24 = 151,200$	$45 \times 150 \times 6 = 40,500$	191,700
Lighting	$60 \times 7 \times 24 = 100,800$	$600 \times 5 \times 6 = 18,000$	118,800
Power	$300 \times 7 \times 24 = 50,400$	$300 \times 5 \times 6 = 9,000$	59,400
Total costs	<u>302,400</u>	<u>67,500</u>	<u>369,900</u>

Luxury suites

Occupied suites peak season = $0.6 \times 20 = 12$

Occupied suites off peak season = $0.2 \times 20 = 4$

Specific costs luxury suites			
	Peak season	Off peak	Total
Room attendant wages	$40 \times 210 \times 12 = 100,800$	$60 \times 150 \times 4 = 36,000$	136,800
Lighting	$800 \times 7 \times 12 = 67,200$	$800 \times 5 \times 4 = 16,000$	83,200

Power	$400 \times 7 \times 12 = 33,600$	$400 \times 5 \times 4 = 8000$	41,600
Total costs	201,600	60,000	261,600

$$\text{Depreciation buildings} = \frac{5}{100} \times 14,000,000 = 700,000$$

$$\text{Depreciation furniture} = \frac{10}{100} \times 1,000,000 = 100,000$$

$$\text{Air conditioner depreciation} = \frac{10}{100} \times 2,000,000 = 200,000$$

$$\begin{aligned} \text{Grossroom attendant wages for all suites} &= 603,000 + 191,700 + 136,800 \\ &= \text{sh. } 931,500 \end{aligned}$$

$$\text{Gross lighting for all suites} = 83,200 + 118,800 + 352,000 = 554,000$$

$$\text{Gross power cost for all suites} = 41,600 + 59,400 + 176,000 = 277,000$$

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Karibu cottages Ltd

Statement of profit or loss

	Sh.
Room attendant wages	931,500
Lighting cost	554,000
Power cost	277,000
Staff salaries	2,200,000
Repairs and innovations	420,000
Linen and laundry	450,000

Interior decorations	500,000
Sundries	315,500
Depreciation building	700,000
Depreciation furniture	100,000
Depreciation air conditioners	200,000
Total cost	6,648,000
Profit (0.25x6,648,000)	<u>1,662,000</u>
Selling price	<u>8,310,000</u>

Assume rent charged for standard = x

Then rent charged for deluxe = $1.5x$

Then rent charged for luxury = $2x$

$$x + 1.5x + 2x = 8,310,000$$

$$\frac{4.5x}{4.5} = \frac{8,310,000}{4.5}$$

$$x = 1,846,666.667$$

$$\text{Rent for luxury} = 2 \times 1,846,666.667$$

$$= \text{sh}3,693,333.333$$

$$\text{Rent for deluxe} = 1.5 \times 1,846,666.667$$

$$= \text{Sh. } 2,770,000.001$$

Rent to be charged daily per suite

$$\text{Standard} = \frac{1,846,666.67 \div 360}{100}$$

$$= \text{Sh. } 51.296$$

$$\text{Deluxe} = \frac{2770\,000.001 \div 360}{30}$$

$$= \text{Sh. } 256.48$$

$$\text{Luxury} = \frac{3\,693\,333.333 \div 360}{20}$$

$$= \text{Sh. } 512.963$$

QUESTION 28

November 2017 Question One B

Mazuri Ltd., a manufacturing company, has three production departments and two service departments. Overheads for the departments for a specific period were as follows:

Sh.“000”

Production departments

X 2,500

Y 2,000

Z 1,500

Service departments

A 1,000

B 780

Total **7,780**

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Additional information:

1. A technical assessment for the apportionment of the service department costs were as follows:

Department	X	Y	Z	A	B
A	30%	30%	20%	-	20%
B	40%	30%	20%	10%	-

2. Output for the production departments during the period are provided below:

Department Unit of outputs

X	200,000
Y	100,000
Z	50,000

Required:

The total overheads chargeable to the production departments using:

- (i) Continuous allotment method. (6 marks)
- (ii) Simultaneous equation method. (4 marks)
- (iii) Overhead cost per unit for each department. (2 marks)

ANSWER

i) Continuous allotment method

Mazuri Ltd.

Overhead allocation schedule (repeated distribution/continuous allotment)

Department	X Sh. “000”	Y Sh. “000”	Z Sh. “000”	A Sh. “000”	B Sh. “000”
Allocated overheads	2,500	2,000	1,500	1,000	780
Distribution of A	300	300	200	(1,000)	200
Distribution of B	392	294	196	98	(980)
Distribution of A	29.4	29.4	19.6	(98)	19.6
Distribution of B	7.84	5.88	3.92	1.96	(19.6)
Distribution of A	0.588	0.588	0.392	(1.96)	-
Total allocation	3,229.828	2629.868	1,919.912	0	0

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(ii) Simultaneous equation method

Let the total overheads of service department A be X

Let the total overheads of service department B be Y

$$X = 1,000 + 0.1Y \dots\dots\dots (i)$$

$$Y = 780 + 0.2X \dots\dots\dots (ii)$$

$$Y = 780 + 0.2 (1,000 + 0.1Y)$$

$$Y = 780 + 200 + 0.02Y$$

$$Y - 0.02Y = 980$$

$$0.98Y = 980$$

$$Y = \frac{980}{0.98} = 1,000$$

$$\text{Then, } X = 1,000 + (0.1 \times 1,000)$$

$$= 1,000 + 100$$

$$X=1,100$$

Allocation schedule

Department	X Sh.	Y Sh.	Z Sh.	A Sh.	B Sh.
Allocated overheads	2,500	2,000	1,500	1,000	780
Distribution of A	330	330	220	(1,100)	220
Distribution of B	<u>400</u>	<u>300</u>	<u>200</u>	<u>100</u>	<u>(1,000)</u>

(iii) Overhead cost per unit for each department

$$\text{Overhead cost per unit} = \left[\frac{\text{Total overheads}}{\text{Number of units}} \right]$$

$$X = \frac{3,230,000}{200,000} = \text{sh. } 16.15 \text{ per unit}$$

$$Y = \frac{2,630,000}{100,000} = \text{sh. } 26.3 \text{ per unit}$$

$$Z = \frac{1,920,000}{50,000} = sh. 38.4 \text{ per unit}$$

QUESTION 29

November 2017 Question Two B

BRK Ltd orders a raw material graded “Exe” for its manufacturing purpose. The following information is available from the production manager.

Annual consumption of Exe (units)	200,000
Ordering cost per order (Sh.)	18,750
Carrying cost per unit (Sh.)	3

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Required:

- i. The Economic order Quantity (EOQ) for material “Exe”. (2 marks)
- ii. The number of orders to be placed per year. (1 marks)
- iii. The production manager has proposed to increase the current Economic Order Quantity (EOQ) to 100,000 units. Justify how this would increase the total cost of inventory thus not profitable. (6 marks)

ANSWER

i)Economic order quantity

$$EOQ = \sqrt{\frac{2DC_o}{ch}}$$

Where

D= Annual demand units

C_o= Ordering cost

ch= holding costs per unit

$$EOQ = \sqrt{\frac{2 \times 200,00 \times 18,750}{3}} = 50,000 \text{ units}$$

(ii) Number of orders placed per year

$$= \frac{D}{Q} = \frac{200,000}{50,000} = 4 \text{ Orders}$$

(iii) How and increase of the current Economic Order Quantity to 100,000 units would increase total cost of inventory.

$$\text{Total cost (TC)} = \frac{D}{Q} C_o + \frac{Q}{2} ch$$

$$\text{Old total cost when 50,000 units were ordered} = \frac{200,000}{50,000} \times 18,750 \times 3$$

$$= 75,000 + 75,000 = sh. 150,000$$

$$\text{Total cost when EOQ increased to 100,000 units} = \frac{200,000}{1000} \times \frac{18,750}{2} \times 3$$

$$= 37,500 + 150,000 = sh. 187,500$$

Advice

Proposal of marketing manager should be rejected since it will lead to an increase in total cost by Shs.37,500.

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QUESTION 30

May 2017 Question One B

Evaluate three benefits of the balanced scorecard.

(6 marks)

ANSWER

Benefits of balanced score card

- It improves communication within the organization and promotes the active formulation and implementation of organizational strategy by making it highly visible through the linkage of performance measures to business unit strategy.

- It help managers to consider all the important operational measures together i.e. it enables managers see whether improvements in one area may have been at the expense of another.
- It provides a comprehensive framework for translating a company's strategic goals into a coherent set of performance measures by developing major goals for the four perspectives and translating these goals into specific performance measures.
- It brings together in a single report four different perspectives on company's performance that relate to many of the dispersed elements of the company's competitive agenda such as becoming customer oriented, shortening response time, improving quality, emphasizing team work, reducing new product launch times and managing for the long term.

QUESTION 31

November 2016 Question One B

Summarise four perspectives which the balanced scorecard focuses on. (4 marks)

ANSWER

Perspectives Balanced scorecard focuses on.

The balanced scorecard is an integrated set of performance measures derived from the company's strategies that gives the top management a fast but comprehensive new of the organization unit. The balanced score card philosophy assumes that an organizations's

vision and strategy is best achieved when the organization is viewed from the following four perspectives

1. Financial perspective

- This is the traditional view
- Concerned on how organization looks to shareholders
- This covers traditional measures such as profitability, return on equity etc.

2. Customer perspectives (How customers do see us?)

- This result to targets that matter to customer's perspectives.

3. Internal business process (What must we excel in?)

This aims at improving internal processes and decision making quality control

4. Learning and growth perspective (we can continue to improve and create value?)

This considers an organizations capacity to maintain its competitive position through acquisition of new skills.

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QUESTION 32

November 2016 Question Three A

Outline four causes of labour turnover in an organization. (4 marks)

ANSWER

Causes of labour turnover in a firm.

- Retirement and death
- Illness and accidents
- Lack of opportunity for career progress.
- Lack of job satisfaction
- Poor working relationship between the management and the employee
- Rate of payment, the employee may find that the remuneration is not commensurate to the amount of work done.

QUESTION 33

November 2015 Question Three B

Kens Stores provided the following information in respect of their operations for the month of July 2015.

Date	Receipts	Date	Issues
3 July	600 units at Sh.60	5 July	1,600 units
7 July	1,000 units at Sh.70	12 July	400 units
18 July	2,400 units at Sh.80	20 July	1,200 units
		29 July	600 units
		31 July	200 units

Additional information:

1. Materials in store as at 30 June 2015 were 2,000 units at Sh.50

2. On 9 July 2015, part of the materials issued on 5 July 2015 amounting to 200 units were returned
3. On 15 July 2015, 100 units were returned to Kena Stores
4. On 21 July 2015, there was material wastage of 500 units
5. Returns from a June 2015 issue of 100 units at Sh.45 was received on 25 July 2015.
6. On 28 July 2015, there was shortage of stock of 20 units.
7. Kena Stores uses the first in first out (FIFO) method to value its inventory.

Required:

A stores ledger card for Kena Stores for the month of July 2015.

(14 marks)

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ANSWER

Store ledger card

Date	Receipts			Issues			Balance		
	Quality units	Price sh.	Amount sh.	Quality units	Price sh.	Amount sh.	Quality units	Price sh.	Amount sh.
July 1							2,000	50	100,000
3	600	60	36,000				2,600		136,000
5				1,600	50	80,000	1,000		56,000
7	1,000	70	70,000				2,000		126,000
9	200	50	10,000				2,200		136,000
12				400	50	20,000	1,800		116,000
15	100	50	5,000				1,900		121,000
18	2,400	80	192,000				4,300		313,000

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20				300	50	15,000	4,000		298,000
20				600	60	36,000	3,400		262,000
20				300	70	21,000	3,100		241,000
21				500	70	35,000	2,600		206,000
25	100	45	4,500				2,700		210,500
28				20	70	1,400	2,680		209,000
29				180	70	12,600	2,500		196,500
29				420	80	33,600	2,080		<u>162,900</u>
31				200	80	16,000	1,880		<u>146,900</u>

Closing stock value 31 July, 2015

1780 units @80 = 142,400

100 units @ 45 = 4,500

146,900

QUESTION 34

November 2015 Question Four A

Respor Ltd manufactures three products namely A, B and C. The company has four departments namely; W, X, Y and Z. The following information relates to respor Ltd for the year ended 30 June 2014.

	Sh."000"
Rates	25,000
Depreciation: Buildings	45,000
Machinery	20,000
Maintenance of buildings	15,000

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Insurance; Buildings	5,000
Machines	4,000
Inventory	12,000
Workman's compensation	4,000
Electricity: Lighting	20,000
Power	24,000
Supervision	60,000
Personnel time keeping and payroll	40,000
Canteen expenses	<u>12,000</u>
	<u>286,000</u>

Departmental information:

	W	X	Y	Z
Value of machines (Sh.'000')	80,000	60,000	60,000	-
Running of machines	15,000	7,000	8,000	-
Average inventory value (Sh.'000')	20,000	15,000	15,000	10,000
Wages paid (Sh.'000')	120,000	170,000	80,000	30,000
Number of employees	15	20	10	5

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Required:

Overhead analysis sheet (10 marks)

ANSWER

a) Overhead analysis sheet

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10640082967 72133 24500

Total overheads overhead analysis sheet

Expense	Apportionment Basis	W	X	Y	Z
Rates	Area (square metres)	$\frac{4000}{10000} \times 25000$ = 10000	$\frac{2000}{10000} \times 25000$ = 5000	$\frac{3000}{10000} \times 25000$ = 7500	$\frac{10000}{10000} \times 25000$ = 2500
Depreciation buildings	Area (square metres)	$\frac{4000}{10000} \times 45000$ = 18000	$\frac{2000}{10000} \times 45000$ = 9000	$\frac{3000}{10000} \times 45000$ = 13500	$\frac{1000}{10000} \times 45000$ = 4500
Depreciation machinery	Running of machines	$\frac{5000}{30000} \times 20000$ = 10000	$\frac{7000}{30000} \times 20000$ = 4667	$\frac{8000}{30000} \times 20000$ = 5333	-
Maintenance buildings	Area (square metres)	0.4×15000 = 6000	0.2×15000 = 3000	0.3×15000 = 4500	0.1×15000 = 1500
Insurance buildings	Area (square metres)	0.4×5000 = 2000	0.2×5000 = 1000	0.3×5000 = 1500	0.1×5000 = 500
Insurance machines	Value of machines	$\frac{80000}{200000} \times 4000$ = 1600	$\frac{60000}{200000} \times 4000$ = 1200	$\frac{60000}{200000} \times 4000$ = 1200	-
Insurance inventory	Value of inventory	$\frac{20000}{60000} \times 12000$ = 4000	$\frac{15000}{60000} \times 12000$ = 3000	$\frac{15000}{60000} \times 12000$ = 3000	$\frac{10000}{60000} \times 12000$ = 2000
Workman's compensation	Wages paid	$\frac{120}{400} \times 4000$ = 1200	$\frac{170}{400} \times 4000$ = 1700	$\frac{80}{400} \times 4000$ = 800	$\frac{30}{400} \times 4000$ = 300

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Electricity: lighting	Area (square metres)	0.4×20000 = 8000	0.2×20000 = 4000	0.3×20000 = 6000	0.1×20000 = 2000
Electricity: power	Running of machines	0.2×24000 = 4800	0.233×24000 = 5600	0.267×24000 = 6400	—
Supervision	No. of employees	$\frac{15}{50} \times 60000$ = 18000	$\frac{20}{50} \times 60000$ = 24000	$\frac{10}{50} \times 60000$ = 12000	$\frac{20}{50} \times 60000$ = 6000
Personnel time keeping & payroll	No. of employees	0.3×4000 = 12000	0.4×4000 = 16000	0.2×4000 = 8000	0.1×40000 = 4100
Canteen expenses	No. of employees	0.3×12000 = 3600	0.4×12000 = 4800	0.2×12000 = 2400	0.1×12000 = 1200
Total Overheads		106,400	82,967	72,133	24,500

QUESTION 35

Pilot paper 2015 Question Three C and D

Explain the term "balanced scorecard".

(2 marks)

Describe four perspectives of balanced scorecard giving two measures of performance that could be used.

(8 marks)

ANSWER

Explanation of the term "balanced scorecard".

The balanced scorecard is an integrated set of performance measures derived from the company's strategies that gives the top management a fast but comprehensive new view of the organization unit. The balanced score card philosophy assumes that an organization's vision and strategy is best achieved when the organization is viewed from the following four perspectives

Perspectives of balanced scorecard

1. Customer perspective – this perspective guides on how an organization should appear to its customers in order to achieve its vision. Measures that could be used are:

- Percent of sales from new products.
- Percent of sales from proprietary products.
- On time delivery (as defined by customers)
- Share of key account purchases.
- Ranking by key account
- Customer satisfaction
- Customer retention
- Time to fill orders
- Market share

2. Internal business process – it's the perspective which into internal business

process to ensure that all business stakeholders are satisfied. Measures that could be used are:

- Cycle time
- Unit cost
- Engineering efficiency
- Defect rate
- Lead time
- Number of suppliers
- Material turnover
- Percent of practical capacity

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3. Learning and growth perspective – this perspective ensures that there is a continuous learning that will sustain the organization ability – to change and improve. Measures that could be used are:

- Time to develop next generation
- Process time to maturity
- New product introduction on versus
- Competition

4. Financial perspective – it gives guidance on how the organization should appear to its shareholders in order to succeed financially. Measures that could be used are:

- Cash flow
- Quartley sales growth and operating income
- Return on equity
- Increased market share
- Return on assets

QUESTION 36

Pilot paper 2015 Question Four B

The finishing department of a factory has the following payroll data for the month of August 2015:

	Direct employees	Indirect employees
Total attendance time	19800 hours	7050 hours
Normal working hours	18000 hours	6400 hours
Productive time	18850 hours	-
Non productive time		
Due to poor supervision	400 hours	-
Normal machine repairs	550 hours	-
Basic hourly rate per hour	Sh.150	Sh.150

Overtime is paid at a premium of 40% of base rate. 40% of the overtime for both categories was worked to meet specific request of a customer. A general bonus of Sh.625,000 was paid to all the employees.

Required:

Wages control account to show the wages allocation for the period. (6 marks)

ANSWER

Wages control account showing the wages allocation for the period

Employees	Time allowed	Time taken	Overtime
Direct employees	18,000	19,800	1,800
Indirect employees	6,400	7,050	650

	Direct employees		Indirect employees	
Basic Pay	$18,000 \times 150 =$	2,700,000	$6,400 \times 150 =$	960,000
Overtime	$140\% \times 150 \times 1,800 =$	<u>378,000</u>	$140\% \times 150 \times 650 =$	<u>136,500</u>
		<u>3,078,000</u>		<u>1,096,000</u>

Total wages:

Direct employees	3,078,000
Indirect employees	1,096,000
Bonus	<u>625,000</u>
	<u>4,799,500</u>

TOPIC 5

ACTIVITY BASED COSTING

QUESTION 1

December 2023 Question Five B

Activity Based Costing (ABC) attempts to relate the incidence of costs to the level of activities undertaken.

Required:

In relation to the above statement, explain the following hierarchy of activities that are used in activity based costing system:

- (i) Unit level activities. (2 marks)
- (ii) Batch level activities. (2 marks)
- (iii) Product level activities. (2 marks)

ANSWER

Explaining the following hierarchy of activities that are used in activity based costing (ABC) system.

i) Unit level activities

Are drivers that create unit level costs as a result of production or acquisition of a single unit of a product or the delivery of a single unit or service. Are activities for which

consumption of resources can be identified with the number of units produced. Example;
output units produced e.t.c

ii) Batch level activities

Are a group of activities or drivers or things made, handled or processed at the same time.

They are activities related to setting up of a batch or a production run, for example,
material ordering, inspection of products e.t.c

iii) Product level activities

Are activities related to creation of a new product line and its maintenance, Examples
include: equipment maintenance, engineering change orders e.t.c

QUESTION 2

August 2023 Question Four B

Mars Bottlers Ltd manufactures and sells four products. Details of the four products and relevant information are given below for the month of August 2023:

Product	A01	B02	C03	D04	Total
Output units	1,200 units	1,000 units	800 units	1,200 units	4,200 units
Machine hours per unit	4 hours	3 hours	2 hours	3 hours	12 hours
Production runs	6	5	4	6	21
Requisitions raised	20	20	20	20	80
Orders executed	12	10	8	12	42

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Cost per unit:	Sh.	Sh.	Sh.	Sh.	
Direct material	3,300	4,125	2,475	4,950	
Direct labour	2,310	1,980	1,155	1,815	

Additional information:

- Currently production overheads are absorbed based on conventional machine hour basis although the management is proposing the adoption of activity-based costing (ABC) technique.
- The production overheads for the period have been analysed as follows together with ABC cost drivers:

Cost element	Sh. "000"	Cost driver
Machinery cost centre	10,430	Total machine hours
Set-up costs	5,250	Number of production runs
Stores receiving costs	3,600	Requisitions raised
Inspection costs	2,100	Number of production runs
Material handling costs	<u>4,620</u>	Orders executed
	<u>26,000</u>	

Required:

Compute a budgeted unit cost and total cost using:

- (i) Conventional technique. (6 marks)
- (ii) Activity based costing (ABC) technique. (8 marks)

ANSWER

(i) Conventional technique.

$$\text{Overhead absorption rate (OAR)} = \frac{\text{Budgeted production OHS}}{\text{Budgeted machine hours}}$$

Budgeted production OHS = sh.26,000,000

Product		Machine hours
A_{01}	(1200×4)	4800
B_{02}	(1000×3)	3000
C_{03}	(800×2)	1600
D_{04}	(1200×3)	3600
Total budgeted Machine hours		= 13000

$$\text{OAR} = \frac{\text{sh.2,600,000}}{13000 \text{ hrs}} = \text{sh.2000 per hour}$$

Product	A01	B02	C03	D04
Cost per unit	Sh.	Sh.	Sh.	Sh.
Direct material	3300	4125	2475	4950
Direct labour	2310	1980	1155	1815
Prime cost	5610	6105	3630	6765
Production OHS @sh.2000 machine hour	8000	6000	4000	6000
Cost per unit	13610	12105	7630	12765
Output units	1200	1000	800	1200
Total cost(sh.)	16,332,000	12,105,000	6,104,000	15,318,000

(ii) **Activity based costing (ABC) technique.**

Overhead absorption rates (OAR) for:

Machinery cost center:

$$\text{OAR} = \frac{\text{overheads}}{\text{machine hours}} = \frac{\text{sh.10,430,000}}{1200(4)+1000(3)+800(2)+1200(3)}$$

$$= \text{sh.802.3077 @ hour}$$

Set-up costs

$$\text{OAR} = \frac{\text{overheads}}{\text{production hours}} = \frac{\text{sh.5,250,000}}{21}$$

$$= \text{sh.250,000 per run}$$

Stores receiving costs

$$\text{OAR} = \frac{\text{overheads}}{\text{Requisitions}} = \frac{\text{sh.3,600,000}}{80}$$

$$= \text{sh.45,000 per requisition}$$

Inspection costs

$$\text{OAR} = \frac{\text{overheads}}{\text{production runs}} = \frac{\text{sh.21,000,000}}{21}$$

$$= \text{sh.100,000 per run}$$

Material handling costs

$$\text{OAR} = \frac{\text{overheads}}{\text{orders}} = \frac{\text{sh.4,620,000}}{42}$$

$$= \text{sh.110,000 per order}$$

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Product	A01	B02	C03	D04	Total sh.
Productions overheads in:	Sh.	Sh.	Sh.	Sh.	Sh.
Machinery cost centre @ 802.3077 per hour	3851077	2406923	1283692	2888308	10430000
Set-up costs @ 250,000 per run	1,500,000	1,250,000	1,000,000	1,500,000	5,250,000
Stores receiving cost @ sh. 450,000 per requisition	900,000	900,000	900,000	900,000	3,600,000

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Inspection costs @ sh.100,000 per run	600,000	500,000	400,000	600,000	2,100,000
Material handling costs @ sh.110,000 per order	1,320,000	1,100,000	880,000	1,320,000	4,620,000
Total overheads	8171077	6156923	44463692	7208308	26,000,000
Output units	1200	1000	800	1200	
Overhead per unit	6809.231	6156.92	5579.615	6006.923	

Product	A01	B02	C03	D04
Cost per unit	Sh.	Sh.	Sh.	Sh.
Direct material	3300	4125	2475	4950
Direct labor	2310	1980	1155	1815
Overheads W1	6809.231	6156.92	5579.65	6006.923
Total cost per unit	12419.231	12261.92	9209.615	12771.923
Output units	1200	1000	800	1200
Total cost	14903077	12261923	7367692	15326308

QUESTION 3

December 2022 Question Three (a)

TQM Ltd. is a manufacturing company that makes three products namely; T, Q, and M.

The data for the period ended 30 November 2022 is given as follows:

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	T	Q	M
Units produced and sold	12,000	16,000	8,000
	Sh.	Sh.	Sh.
Sales price per unit	50	70	60
Direct material cost per unit	16	24	20
Direct labour cost per unit	8	12	8

Production overheads costs	Total	Cost drivers
	Sh.	
Machining costs	102,000	Machine hours
Production scheduling	84,000	Number of production runs
Set-up costs	54,000	Number of production runs
Quality control	49,200	Number of production runs
Receiving materials	64,800	Number of component receipts
Packing materials	<u>36,000</u>	Number of customer orders
	<u>390,000</u>	

Information on the cost driver is given as follows:

	T	Q	M
Direct labor hours per unit	1	$1\frac{1}{2}$	1
Machine hours per unit	$1/2$	1	$1\frac{1}{2}$
Number of components per unit	3	5	8
Number of components receipts	18	80	64
Number of customer orders	6	20	10
Number of production runs	6	16	8

Required:

Using activity-based costing (ABC), determine the cost and gross profit per unit for each product during the period. (10 marks)

ANSWER

1. Overhead rates for:

Working (W)

$$\text{Machining} = \frac{\text{Overhead costs}}{\text{Machine hours}}$$

$$\text{Overhead costs} = \text{Sh. } 102\,000$$

$$\begin{aligned}\text{Machine hours} &= (12000 \times \frac{1}{2}) + (16000 \times 1) + (8000 \times 1\frac{1}{2}) \\ &= 34\,000 \text{ hours}\end{aligned}$$

$$\text{Hence, overhead absorption rate (OAR)} = \frac{\text{Sh. } 102\,000}{34\,000 \text{ hrs}} = \text{Sh. } 3 @ \text{hr}$$

$$\begin{aligned}\text{Production Scheduling} &= \frac{\text{Overhead costs}}{\text{No. of production runs}} \\ &= \frac{\text{Sh. } 84\,000}{(6+16+8)} = \text{Sh. } 2800 \text{ per run.}\end{aligned}$$

$$\begin{aligned}\text{Set up costs} &= \frac{\text{Overhead costs}}{\text{No. of production runs}} \\ &= \frac{\text{Sh. } 54\,000}{(6+16+8)} = \text{Sh. } 1800 \text{ per run.}\end{aligned}$$

$$\text{Quality control} = \frac{\text{Overhead costs}}{\text{No. of production runs}}$$

$$= \frac{Sh.49200}{(6+16+8)} = Sh. 1640 \text{ per run.}$$

$$\text{Receiving materials} = \frac{\text{Overhead Costs}}{\text{No.of component receipt}}$$

$$= \frac{Sh.64800}{(18+80+64)} = Sh. 400 @ \text{component receipt.}$$

$$\text{Packing materials} = \frac{\text{Overhead costs}}{\text{No.of customer orders}}$$

$$= \frac{Sh.36000}{(6+20+10)} = Sh. 1000 \text{ per order.}$$

2. Production overhead cost per unit

Product	T	Q	M	Total
Production OH costs in:	Sh.	Sh.	Sh.	Sh.
Machining@Sh.3w ₁	18000	48000	36000	102 000
Production scheduling@Sh.2800w ₁	16 800	44 800	22 400	84 000
Set up @Sh.1800w ₁	10 800	28 800	14 400	54 000
Quality control@Sh.1640w ₁	9840	26 240	13 120	49 200
Receiving materials@Sh.400w ₁	7200	32 000	25 600	64 800
Packing				

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materials@Sh.1000w ₁	6000	20 000	10 000	36 000
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Total production OH

costs	<u>68 640</u>	<u>199 840</u>	<u>121 520</u>	<u>390 000</u>
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Production OHS per unit	<u>68640</u>	<u>199840</u>	<u>121520</u>	
	12000	16000	8000	

	Sh.5.72	Sh.12.49	Sh.15.19	
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Product	T	Q	M	
	Sh.	Sh.	Sh.	
Direct material cost	16	24	20	
Direct labor cost	<u>8</u>	<u>12</u>	<u>8</u>	
Prime cost	24	36	28	
Production OHS w ₂				
	<u>5.72</u>	<u>12.49</u>	<u>15.19</u>	
Total production cost	29.72	48.49	43.19	
Gross profit (bal. figure)	20.28	21.51	16.81	
Sales price per unit	50	70	60	

QUESTION 4

August 2022 Question Two (b)

Betacare Enterprise produces several products which pass through two production departments in its factory. These two departments are concerned with filling and sealing operations. There are two service departments; canteen and boiler house in the factory.

Additional information:

1. Predetermined overhead absorptions rate, based on direct labour hours are established for the two production departments.
2. The budgeted expenditure for these two departments for the period just ended, including the appointments of service department overheads was as follows:
 - Filling centre Sh.110,040
 - Sealing centre Sh.53,300
3. Budgeted direct labour hours were 13,100 hours for filling cost centre and 10,250 hours for sealing cost centre.
4. Service department overheads are apportioned as follows:

		Canteen	Boiler house
		%	%
Production department:	Filling centre	40	50
	Sealing centre	50	30

Canteen	Boiler house
%	%

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Service department:	Canteen	-	20
	Boiler house	<u>10</u>	<u>-</u>
Total		<u>100</u>	<u>100</u>

5. During the period just ended, actual overhead costs and activity were as follows:

	Sh.	Direct labour hours
Filling centre	74,260	12,820
Sealing centre	38,115	10,075
Canteen	25,050	
Boiler House	24,375	

Required:

Reapportion and calculate the overheads absorption rates in each production cost centre using:

- (i) Stepwise technique. (7 marks)
- (ii) Simultaneous technique. (7 marks)
- (iii) Compute over or under absorption of overheads under (b) (ii) above for filling and sealing production departments. (2 marks)

ANSWER

i) Stepwise techniques

Details	Base	Production Depts		Service Dept		Total
		Filling	Sealing	Canteen	Boiler	Sh.

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		Sh.	Sh.	Sh.	Sh.	
Direct Overheads	Direct	110,040	53,300	25,050	24,375	212,765
Apportionment of canteen overheads	40:50:10	10,020	12,525	(25,050)	2,505	
Apportionment of Boiler Overheads	50:30	16,800	10,080	0	(26,880)	
Total		136860	75905	0	0	212,765
Overhead rate		$\frac{136,860}{13,100}$	$\frac{75,905}{10,250}$			
		=				
		Sh.10.45	= Sh.7.41			

ii) Simultaneous techniques

Let: X = Total overheads of canteen dept.

Y = total overheads of Boiler House dept.

Hence,

$$X = 25,050 + 0.2y$$

$$Y = 24,375 + 0.1x$$

$$X = 25,050 + 0.2(24,375 + 0.1x)$$

$$0.98x = 29,925$$

$$X = \text{sh.}30,536$$

$$Y = 24,375 + .,1(30536)$$

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= sh.27,429

Details	Base	Production Departments		Total
		Filling center Sh.	Sealing center Sh.	Sh.
Direct overheads	Direct	110,040	53,300	163,340
Apportionment of 90% canteen OHS	40:50	12,214	15,268	27,482
Apportionment of 80% Boiler OHS	50:30	13,714	8,229	21,943
Total		135,968	76,797	212,765
Overhead Rate		$\frac{135968}{13100}$ <u>= Sh.10.38</u>	$\frac{76797}{10250}$ <u>= Sh.7.49</u>	

iii) Computing over(under) absorption of overheads under b(ii) above for filling and sealing production departments.

Production Dept	Filling centre	Sealing centre
	Sh.	Sh.
Absorbed OHS	(10.38 × 12820) 133072	(7.49 × 10075) 75462
less Actual OHS	<u>74,260</u>	<u>38,115</u>
Over(under) Absorption	58,812	37,347

QUESTION 5

August 2022 Question Four (b)

Zigzag Line Coaches Ltd. operates a fleet of executive coaches across the country.

The following information is provided:

	30 seater coaches	50 seater coaches
Number of coaches	5	10
Number of drivers	5	10
Weekly wage cost per driver	Sh.12,000	Sh.12,500
Cost of each coach	Sh.6,000,000	Sh.9,200,000
Fuel consumption-kilometres per litre	12.5	8.0
Annual licence per coach	Sh.35,000	Sh.50,000
Annual insurance per coach	Sh.34,000	Sh.40,000

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Additional information:

1. Annual repairs and maintenance were budgeted at Sh.6,500,000 and are to be apportioned between the coaches in the ratio of their total mileage in kilometres covered.
2. Administrative expenses are budgeted at Sh.9,620,000 annually and are to be apportioned to each coach in the ratio of driver's wage costs.
3. Each 30 seater coach is kept for 6 years at which it will have a resale value of Sh.2,400,000 while every 50 seater coach will be replaced after 7 years and have a resale value of Sh.2,900,000.
4. It is the policy of the company to depreciate the coaches on a straight line basis. Depreciation expense is charged annually.

5. It is envisaged that each 30 seater coach will travel 1,000 kilometres per week and each 50 seater coach will travel 800 kilometres per week.
6. The cost of the fuel is budgeted at Sh.120 per litre.
7. It is budgeted that each coach will be in operation for 50 weeks per year and the drivers will be paid for 52 weeks.

Required:

Cost per kilometer per passenger for:

- (i) 30 seater coach. (8 marks)
- (ii) 50 seater coach. (7 marks)

ANSWER

Cost per kilometer per passenger for:

- i) 30 seater coach
- ii) 50 seater coach

1. Annual depreciation = $\frac{\text{Cost} - \text{salvage value}}{\text{Useful life}}$

For 30 seater coach

$$\begin{aligned}\text{Annual depreciation} &= \frac{6,000,000 - 2,400,000}{6} \\ &= \text{sh. } 600,000\end{aligned}$$

For a 50 seater coach

$$\text{Annual depreciation} = \frac{9,200,000 - 2,900,000}{7}$$

$$= \text{sh.}900,000$$

2. Number of kilometres travelled per year

For 30 seater coach

$$= 1000 \times 50$$

$$= 50,000 \text{ km p.a per coach} \times 5 = 250,000 \text{ km for all}$$

For 50 seater coach

$$= 800 \times 50$$

$$= \text{sh.}40,000 \text{ km p.a per coach} \times 10 = 400,000 \text{ km for all}$$

3. Total number of passenger km per year

For 30 seater coach

$$= 2 \times 30 \times 50,000$$

$$= 3,000,000 \text{ passengers KM}$$

For 50 seater coach

$$= 2 \times 50 \times 40,000$$

$$= 4,000,000$$

4. Driver's Wage cost

$$30 \text{ seater cost } (12,000 \times 52 \times 5) = 3,120,000$$

$$50 \text{ seater coach } (12,500 \times 52 \times 10) = 6,500,000$$

$$\text{Annual total cost} = 9,620,000$$

5. Administrative Expenses

30 seater (All) = 3,120,000

50 seater (All) = 6,500,000

Total cost = 9,620,000

(ii) Operating cost sheet for 50 seater coach.

	Sh.	Sh.
Standing charges:		
Depreciation W1	900,000	
Administrative expenses $\left(\frac{6,500,000 \times 5}{10}\right)$	650,000	
Annual license	50,000	
Annual insurance	<u>40,000</u>	1,640,000
Maintenance charges:		
Annual repairs and maintenance	<u>400,000</u>	400,000
$\left[\frac{40}{65} (w2) \times 6,500,000 \times \frac{1}{10}\right]$		
Running charges:		
Fuel consumption (40000×8.0)	320,000	
Driver's wage cost (12500×52)	650,000	<u>970,000</u>
Total cost		<u><u>3,010,000</u></u>

Cost per kilometer per passenger:

$$= \frac{\text{sh.} 3,010,000}{4,000,000 \times 3}$$

$$= \text{Sh.}0.7525$$

Operating cost sheet for 30 seater coach

	Sh.	Sh.
Standing charges:		
Depreciation w1	600,000	
Administrative expenses $\left(\frac{3,120,000w5}{5}\right)$	624,000	
Annual license	35,000	
Annual insurance	34,000	1,293,000
Maintenance charges:		
Annual repairs and maintenance	500,000	500,000
$\left[\frac{25}{65}(w2) \times 6500000 \times \frac{1}{5}\right]$		
Running charges:		
Fuel consumption $(50000w2 \times 12.5)$	625,000	
Driver's wage cost (12000×52)	624,000	1,249,000
Total cost		3,042,000

Cost per kilometer per passenger:

$$= \frac{\text{sh.}3,042,000}{3,000,000w3}$$

$$= \text{sh.}1.014$$

QUESTION 6

April 2022 Question Three (c)

Seek Plastics Ltd. manufactures plastic components for water pumps.

The following budgeted information is available for three of their key plastic components:

	W	X	Y
	Sh. per unit	Sh. Per unit	Sh. Per unit
Selling price	200	183	175
Direct materials	50	40	35
Direct labour	30	35	30
Units produced and sold	10,000	15,000	18,000

Additional information:

- The total number of activities for each of the three products for the period is as follows:

	Product		
	W	X	Y
Number of purchase requisitions	1,200	1,800	2,000
Number of set ups	240	260	300

- Overhead costs have been analysed as follows:

Receiving/ inspecting quality assurance Sh.1,400,000

Production scheduling/ machine set up Sh.1,200,000

Required:

Determine the budgeted profit per unit of each of the three products using

Activity Based Costing (ABC) method. (6 marks)

ANSWER

Cost per requisition

$$\begin{aligned} &= \frac{1,400,000}{(1200+1800+2000)} \\ &= \frac{1,400,000}{5,000} \\ &= \text{Sh. } 280 \end{aligned}$$

Cost per set up

$$\begin{aligned} &= \frac{1,200,000}{(240+260+300)} \\ &= \frac{1200000}{800} \\ &= \text{Sh. } 1500 \end{aligned}$$

Number of set ups per unit and cost

$$W = (240 \div 10,000) \times 1500 = 36$$

$$X = (260 \div 15000) \times 1500 = 26$$

$$Y = (300 \div 18000) \times 1500 = 25$$

Number of requisitions and cost

$$W = (1200 \div 10,000) \times 280 = 33.60$$

$$X = (1800 \div 15000) \times 280 = 33.60$$

$$Y = (2000 \div 18000) \times 280 = 31.11$$

	W	X	Y
	Sh.	Sh.	Sh.
Selling price	200	183	175
Direct material	(50)	(40)	(35)
Direct labour	(30)	(35)	(30)
Requisition cost	(33.60)	(33.60)	(31.11)
Set up cost	<u>(36.00)</u>	<u>(26.00)</u>	<u>(25.00)</u>
Profit (loss)	<u>50.40</u>	<u>48.40</u>	<u>53.89</u>

QUESTION 7

December 2021 Question Five (c)

Describe two advantages and two disadvantages of using activity based costing (ABC).

(4 marks)

ANSWER

Advantages

- Better basis for cost apportionment.

- Overheads are traced to the product.
- ABC brings attention to cost behaviour and helps in the reduction of costs.
- ABC provides a useful means of getting financial and non-financial data.
- More realistic product costs.
- Forces managers to consider the drivers of cost in their business.

Disadvantages

- Difficulty in picking cost drivers.
- Very time consuming.
- The problem of common costs.
- A full ABC system having numerous cost pools and cost drivers is more complex and more expensive to operate.

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QUESTION 8

September 2021 Question Two B

The following details have been recorded for four batches made in the month of June

2021:

Batch	A	B	C	D
Output in units	250	60	200	120
Cost per batch:	Sh.	Sh.	Sh.	Sh.
Direct materials	1,650	750	2,100	900
Direct labour	9,200	1,520	6,880	2,400
Labour hours per batch	1,150	190	860	300

Additional information:

1. The total production overheads for the month of June 2021 has been analysed as follows:

	Sh.
Machine related cost	14,600
Material handling and dispatch	6,800
Stores	8,250
Inspection/quality control	5,850
Set-ups	6,200
Engineering support	8,300

2. The following cost driver volumes were recorded for the four batches:

Batch	A	B	C	D	Total
Machine hours per batch	520	255	610	325	1,710
Material movements	180	70	205	40	495
Requisitions	40	21	43	26	130
Inspections	18	8	13	8	47
Set-ups	12	7	16	8	43
Engineering hours	65	38	52	35	190

Required:

- (i) Based on a labour hour overhead absorption rate (OAR), compute the batch cost and unit cost using traditional absorption costing system. (4 hours)
- (ii) The batch cost and unit cost using Activity Based Costing (ABC) system.

(8 marks)

ANSWER

(i) Batch cost and unit cost using traditional absorption costing system.

$$A = 1150 \times 250 = 287,500 \text{ hours}$$

$$B = 190 \times 60 = 11,400 \text{ hours}$$

$$C = 860 \times 200 = 172,000 \text{ hours}$$

$$D = 300 \times 120 = \underline{36,000 \text{ hours}}$$

$$\text{Total} \quad \underline{\underline{506,900 \text{ hours}}}$$

$$\text{O.A.R} = \frac{50,000}{506,900} = 0.10 \text{ per direct labour hour}$$

	A	B	C	D
	Ksh.	Ksh.	Ksh.	Ksh.
Direct material	412,500	45,000	420,000	108,000
Direct labour	<u>2,300,000</u>	<u>91,200</u>	<u>1,376,000</u>	<u>288,000</u>
Prime cost	2,712,500	136,200	1,796,000	396,000
Production overheads @ 0.10	<u>271,250</u>	<u>13,620</u>	<u>179,600</u>	<u>39,600</u>
Total cost	2,983,750	149,820	1,775,600	435,600
Output (units)	250	60	200	120
Cost per batch	11,935	2,497	9,878	3,630

$$\text{Machine related cost} = \frac{14,600}{1,710} = \text{Ksh. } 8.54$$

$$\text{Material handling and dispatch} = \frac{6,800}{495} = \text{Ksh } 13.74$$

$$\text{Stores} = \frac{8,250}{130} = \text{Sh } 63.46$$

$$\text{Inspection} = \frac{5,850}{47} = \text{Ksh. } 124.47$$

$$\text{Set-ups} = \frac{6,200}{43} = \text{Ksh. } 147.42$$

$$\text{Engineering} = \frac{8,300}{190} = \text{Ksh. } 43.68$$

(ii) **Batch cost and unit cost using Activity Based Costing (ABC) system.**

ABC SYSTEM

	A	B	C	D	Total
	Ksh	Ksh	Ksh	Ksh	Ksh
Prime cost	2,712,500	136,200	1,796,000	396,000	5,040,700
Machine related cost at 8.54	4,440.80	2,177.70	5,209.40	2,775.50	14,603.40
Material handling & dispatch at 13.74	2,473.20	961.80	2,816.70	553.60	6,805.30
Stores at 63.46	2,538.40	1,332.66	2,728.78	1,650.22	8,805.06
Set ups at 147.42	1,769.04	1,031.94	2,358.72	1,179.56	6,339.26
Inspection at 124.47	2,240.46	995.76	1,618.11	995.76	5,850.09
Engineering support at 43.68	2,839.20	1,659.84	2,271.36	1,528.80	8,299.20
Outputs	250	60	200	120	
Total cost	2,726,781.10	144,359.70	1,813,003.07	404,683.44	5,088,827.31
Cost per unit Sh.	10,907.12	2,406.00	9,065.02	3,372.36	

QUESTION 9

May 2021 Question Three A

Describe the three main stages of the Activity Based Costing (ABC) system. (6 marks)

ANSWER

- i) Identify an organization major activities
- ii) Identify factors which determine the size of the cost of an activity. These are known as cost drivers.
- iii) Collect the cost associated with each cost driver into what are known as cost pools.
- iv) Charge cost to the products on basis of usage of activity

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QUESTION 10

May 2019 Question Three B

Machakato Ltd. makes three main products using the same equipment. Total overheads amounting to Sh.720,000 were charged for the last quarter of the financial year ended 31 December 2018.

Details of the three products for the months of September 2018 to December 2018 are as follows:

	Product		
	A	B	C
Labour hours per unit	2	3	1
Machine hours per unit	3	2	5

Material cost per unit (Sh.)	45	28	52
Volume (Units)	1,500	2,400	11,000

Additional information:

1. Direct labour costs are Sh.14 per hour.
2. Production overheads are absorbed on a material cost percentage basis.
3. The machine rate for the period under consideration is Sh.56 per machine hour.
4. Further analysis shows that the total production overheads could be apportioned as follows:

- Cost relating to set-ups 20%
- Cost relating to materials movement 35%
- Cost relating to inspection 45%

5. The following activity volumes are associated with the product line for the period:

	Total activities for the period		
	Number of Set-ups	Number of material movements	Number of inspections
Product: A	78	12	140
B	112	21	170
C	<u>460</u>	<u>82</u>	<u>640</u>
	<u>650</u>	<u>115</u>	<u>950</u>

Required:

Cost per unit for each product using:

- (i) Traditional method. (8 marks)
- (ii) Activity Based Costing (ABC). (8 marks)

ANSWER

(i) Cost per unit using Traditional method

Product	A	B	C
Labour Cost	$2 \times 1,500 \times 14 = 42,000$	$3 \times 2,400 \times 4 = 10,800$	$1 \times 11,000 \times 14 = 154,000$
Machinery	$3 \times 1,500 \times 56 = 252,000$	$2 \times 2,400 \times 56 = 268,800$	$5 \times 11,000 \times 56 = 3,080,000$
Material Cost	$1,500 \times 45 = 67,500$	$2,400 \times 28 = 67,200$	$11,000 \times 52 = 582,583$
Overhead cost	68,770	68,647	582,583
Total costs	430,270	505,447	4,388,583
Units	1,500	2,400	11,000
Cost per unit	286.85	210.60	398.96

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$$\text{Total material cost} = 67,500 + 67,200 + 572,000 = 706,700$$

Apportionment of production overheads

$$\text{Product A} = \frac{67,500}{706,700} \times 720,000 = 68,770$$

$$\text{Product B} = \frac{67,200}{706,700} \times 720,000 = 68,647$$

ii) Cost per unit using Activity Based Costing (ABC)

Breakdown of production overheads

$$\text{Setup cost} = \frac{20}{100} \times 720,000 = 144,000$$

$$\text{Material movement cost} = \frac{35}{100} \times 720,000 = 252,000$$

$$\text{Inspection cost} = \frac{45}{100} \times 720,000 = 324,000$$

Apportionment of production overheads

Overhead	Product A	Product B	Product C
Set up cost	$\frac{45}{100} \times 144,000$ =17,280	$\frac{112}{650} \times 144,000$ =24,812	$\frac{460}{650} \times 144,000$ =101,908
Material movement cost	$\frac{12}{115} \times 252,000$ =26,296	$\frac{21}{115} \times 252,000$ =46,017	$\frac{82}{115} \times 252,000$ =179,687
Inspection cost	$\frac{140}{950} \times 324,000$ =47,747	$\frac{170}{950} \times 324,000$ =57,979	$\frac{640}{950} \times 324,000$ =218,274
Overhead cost	=91,323	=128,808	=499,869

Product	A	B	C
Labour cost	42,000	100,800	154,000
Machining cost	252,000	268,800	30,080,000
Material cost	67,500	67,200	572,000
Overhead cost	<u>91,323</u>	<u>128,808</u>	<u>499,869</u>
Total cost A	452,823	565,698	4305869
Units B	1500	2400	11000
Cost per unit A/B	301.882	235.67	391.443

QUESTION 11

May 2017 Question Three B

ABC Ltd. plans to use activity-based costing to determine its product costs. Currently, it uses a single plantwide factory overhead rate for allocating factory overheads to products, based on direct labour hours.

The total factory overhead cost is as follows:

Department	Factory overheads
	Sh.
Production support	1,225,000
Production (factory overheads only)	175,000
Total cost	1,400,000

The company has determined that it performs four major activities in the production support department.

These activities along with their budgeted costs are as follows:

Production support activities	Budgeted cost
	Sh.
Set-up	428,750
Production control	245,000
Quality control	183,750
Materials management	367,500
Total	1,225,000

MANAGEMENT ACCOUNTING REVISION KIT

ABC Ltd. has estimated the following activity-based usage quantities and units produced for each of its three products:

Product	Number of units	Direct Labour hours	Set-ups	Production orders	Inspections	Material requisitions
Product K	10,000	25	80	80	35	320
Product L	2,000	10	40	40	40	400
Product M	<u>50,000</u>	<u>140</u>	<u>5</u>	<u>5</u>	<u>0</u>	<u>30</u>
Total	<u>62,000</u>	<u>175,000</u>	<u>125</u>	<u>125</u>	<u>75</u>	<u>750</u>

Required:

Determine the factory overhead cost per unit for each product using:

- (i) Single plantwide factory overhead rate method. (4 marks)
- (ii) Activity-based costing. (8 marks)
- (iii) Giving reasons, advise the management of ABC Ltd. on the most accurate method of product costing. (4 marks)

ANSWER

i) Single plantwide factory overhead rate method

$$\text{Factory overhead rate} = \frac{\text{factory overhead cost}}{\text{Total direct labour hours}}$$

$$= \frac{1,400,000}{1,750,000}$$

$$= sh. 8$$

Product	Hours required to produce a unit	Cost per unit
K	$25,000 \div 10,000 = 2.5$	$2.5 \times 8 = sh. 20$
L	$10,000 \div 2,000 = 5$	$5 \times 8 = sh. 40$
M	$140,000 \div 50,000 = 2.8$	$2.8 \times 8 = Sh. 22.4$

ii) Activity based costing

Cost per set up = total set up cost $\div$ number of set ups

$$= 428,750 \div 125 = sh. 3430$$

Cost per order = total production control cost $\div$ number of production orders

$$= 245,000 \div 125 = sh. 1,960$$

Cost per inspection = total quality control cost $\div$ number of inspections

$$= 183,750 \div 75 = sh. 2,450$$

Cost per requisition = total material management

Cost $\div$ total material requisitions

$$= 367,500 \div 750 = sh. 490$$

Product	K	L	M
Set up	$3430 \times 80 = 274,400$	$3430 \times 40 = 137,200$	$3430 \times 5 = 17,150$
Production control	$1960 \times 80 = 156,800$	$3960 \times 40 = 78,400$	$1960 \times 5 = 9,800$
Quality control	$2450 \times 35 = 85,750$	$2450 \times 40 = 98,000$	$2450 \times 0 = 0$

Materials management	$490 \times 320 = 156,800$	$490 \times 400 = 196,000$	$490 \times 30 = 14,700$
Total costs	<u>673,750</u>	<u>509,600</u>	<u>41,650</u>
Units	10,000	2,000	50,000
Cost per unit	67,375	254.8	0.833

iii) Activity based costing is the most accurate method because

- ABC is flexible enough to trace costs to processes, customers, areas of managerial responsibility as well as product costs.
- ABC recognizes that it is activities which cause costs, not products and it is products which consume activities.
- More realistic product costs are provided especially in advanced manufacturing technology (AMT) factories where support overheads are a significant proportion of total costs.
- More overheads can be traced to the product in modern factories there are growing number of non- factory floor activities. ABC is concerned with all activities so takes product costing beyond the traditional factory basis

QUESTION 12

May 2016 Question Three B

QFX Ltd. uses batch costing in cost analysis. The following information is provided:

Batch	P	Q	R	S
Output in units	2,500	600	2,000	1,200
Cost per batch				
Direct labour (Sh.)	92,000	15,200	68,800	24,000
Direct materials (Sh.)	16,500	7,500	21,000	9,000
Labour hours per batch	11,500	1,900	8,600	3,000

The following data relates to the total production overheads for the period ended 31 March 2016:

Particulars	Cost (Sh.)	Cost driver
Stores	82,500	Number of requisitions
Inspection	58,500	Number of inspections
Set-up	62,000	Number of set-ups
Engineering support	83,000	Engineering hours
Machine related costs	146,000	Machine hours
Materials dispatch	<u>68,000</u>	Materials movements
	<u>500,000</u>	

Corresponding cost driver volumes for the batches were as follows:

	P	Q	R	S	Total
Requisitions	400	210	430	260	1,300
Inspections	180	80	130	80	470
Setups	120	70	160	80	430
Engineering hours	650	380	520	350	1,900

Machine hours	5,200	2,550	6,100	3,250	17,100
Materials movement	1,800	700	2,050	400	4,950

Required:

Compute the batch cost and unit cost using:

- (i) Traditional costing based on a labour hour overhead absorption rate. (6 marks)
- (ii) Activity based costing (ABC) system. (8 marks)

ANSWER

i) Traditional costing based on labour hour overhead absorption rate

$$\begin{aligned}
 \text{Overhead absorption rate} &= \frac{\text{Total overhead Cost}}{\text{Total labour hour}} \\
 &= \frac{500\,000}{11\,500 + 1\,900 + 8\,600 + 3\,000} \\
 &= 500\,000 \div 25\,000 \\
 &= \text{Sh. 20 per hour}
 \end{aligned}$$

Batch	P	Q	R	S
Output in units	2500	600	2000	1500
	Sh.	Sh.	Sh.	Sh.
Direct labour	92000	15200	68800	24000
Direct materials	<u>16500</u>	<u>7500</u>	<u>21000</u>	<u>9000</u>
Prime cost	108500	22700	89800	33000

Overhead cost	<u>230000</u>	<u>38000</u>	<u>172000</u>	<u>60000</u>
Total cost	<u>338500</u>	<u>60700</u>	<u>261800</u>	<u>93000</u>
Cost per unit	135.40	101.17	130.90	62.00

ii) Activity based costing (ABC) system

$$\text{Total requisitions} = 400 + 210 + 430 + 260 = 1300$$

$$\text{Cost per requisition} = \frac{\text{Total store cost}}{\text{Total requisitions}}$$

$$82\,500 \div 1\,300 = \text{Sh. } 63.46$$

$$\text{Cost per inspection} = \frac{\text{Total store cost}}{\text{Total inspections}}$$

$$= 58\,500 \div 470 = 124.47$$

$$\text{Cost per set up} = \frac{\text{Total setup cost}}{\text{Total set ups}}$$

$$62\,000 \div 430 = \text{sh. } 144.19$$

$$\text{Cost per engineering support} = 83\,000 \div 1\,900$$

$$= \text{Sh. } 43.68$$

$$\text{Cost per machine hour} = \frac{\text{Total machined related costs}}{\text{Total machine hour}}$$

$$= 146\,000 \div 17\,100 = \text{sh. } 8.454$$

$$\text{Cost per material movement} = \frac{\text{Total material dispatch costs}}{\text{Total material movements}}$$

$$= \frac{68\,000}{4\,950} = Sh. 13.74$$

Batch	P	Q	R	S
Output in unit	2,500	600	2,000	1,200
Direct labour	92,000	15,200	68,800	24,000
Direct materials	<u>16,500</u>	<u>7,500</u>	<u>21,000</u>	<u>9,000</u>
Prime cost	108,500	22,700	89,800	33,000
Overheads: Stores	25,384	13,326.60	27,287.8	16,499.60
Inspection	22,404.6	9,957.60	16,181.1	9,957.60
Set up	17,303.8	10,093.3	23,070.1	11,535.2
Engineering superb	28,392	16,598.4	22,713.6	15,288.0
Machine related costs	44,408.0	21,777.0	52,094.0	27,755.0
Material Movement	<u>24,732.0</u>	<u>9,618.0</u>	<u>28,167.0</u>	<u>5,496.0</u>
Total cost	<u>271,123.4</u>	<u>104,070.9</u>	<u>259,313.9</u>	<u>119,531.4</u>
Cost per unit	108.45	173.45	129.66	99.61

Working

	P	Q	R	S
Requisition	63.46×400 =25,384	63.46×210 =13,326.60	63.46×430 =27,287.8	63.46×260 =16,499.60
Inspection	124.47×180	80×124.47	130×124.47	80×124.47

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	=22,404	=9,957.60	=16,181.1	=9,957.60
Set ups	144.19×120 =17,302.8	144.19×70 =10,093.30	144.19×160 =23,070.4	144.19×80 =11,535.2
Engineering hours	43.68×650 =28,392	43.68×380 =16,598.4	43.68×520 =22,713.6	43.68×350 =15,288
Machine hours	$8.54 \times 5,200$ =44,408	$8.54 \times 2,550$ =21,777	8.54×6100 =52,094	8.54×3250 =27,755
Material movement	$13.74 \times 1,800$ =24,732	700×13.74 =9,618	$2,050 \times 13.74$ =28,167	400×13.74 =5,496

TOPIC 6

PRODUCT COSTING METHODS

QUESTION 1

April 2024 Question Four A and B

- (a) Summarise **FOUR** features of process costing. (4 marks)
- (b) Vuna Ltd. are the manufacturers of chemicals for use in agricultural farms. One of their products passes through two processes; P and Q before it is completed and taken to a warehouse.

The following data relates to process Q for the month of march 2024:

1. Opening work-in-progress 4,000 units Degree of completion and cost:

Sh. "000"

Materials	100%	240,000
Labour	60%	144,000
Overheads	60%	72,000

2. Units received from process P were 40,000 at a cost of Sh.1,700,550,000

3. Additional cost during the period in process Q:

Sh. "000"

Materials	759,000
Labour	1,355,760
Overheads	640,220

4. Closing work-in-progress was 3,000 units with the following degree of completion:

Materials	100%
Labour and overheads	50%

5. Units scrapped were 4,000 having the following degree of completion:

Materials	100%
Labour and overheads	80%

6. Normal process loss was 5% of the expected production.
7. Spoiled units realised Sh.15,000 for each unit.
8. The company uses FIFO method of valuation for the opening work-in-progress.

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Required:

- | | | |
|-------|--|-----------|
| (i) | Determine units abnormally lost in process Q. | (2 marks) |
| (ii) | Prepare a statement of equivalent units of production. | (4 marks) |
| (iii) | Prepare a statement of cost. | (4 marks) |
| (iv) | Prepare process Q account. | (4 marks) |
| (v) | Prepare abnormal loss account. | (2 marks) |

ANSWER

(a) Features of process costing.

- The process is standardized
- The product is homogeneous
- Costs are accumulated process wise
- Output of one process becomes the input i.e raw material of another process
- The output of the last process is transferred to the finished goods stock
- If there is stock of semi - finished goods i.e work – in – progress (WIP) it is expressed in terms of equivalent units
- Each process is treated as separate cost unit for costing purposes

(b) Vuna Ltd

(i) Units abnormally lost in process Q.

Actual input = OP . WIP + Added materials

$$= 4000 + 40,000$$

$$= 44000 \text{ units}$$

Actual output (Including closing WIP) = Actual input – Actual loss

$$= 44000 - 4000$$

$$= 40,000 \text{ units}$$

Actual Output from process Q = 40,000 – 3000 = 37,000 units

Process	Q
Details	Units
Actual Output	37000
Normal loss: 5%(4000+4000)	2200
Abnormal loss (gain)	1800
Closing WIP	<u>3000</u>
Actual input (OP.WIP + Added materials)(4000+4000)	<u>44000</u>

Hence, abnormal loss in process Q = 1800 units

(ii) Prepare a statement of equivalent units of production.

Input Details	Units	Output		Equivalent Units (EU) in:					
		Details	Units	Material		Labour		Overheads	
				%	EU	%	EU	%	EU
OP.WIP	4000	OP.WIP	4000	0	0	40	1600	40	1600
Units Added	40000	Units completed	33000	100	33000	100	33000	100	33000
		Normal loss	2200	0	0	0	0	0	0
		Abnormal loss /gain	1800	100	1800	80	1440	80	1440
		Closing WIP	3000	100	3000	50	1500	50	1500
Total	44000	Total	44000		37800		37540		37540

(iii) Statement of cost.

Element of cost	Materials Sh. „000“	Labour Sh. „000“	Overheads Sh. „000“	Total Sh. „000“
Units introduced	1,700,550	0	0	1,700,550
Additional cost	759,000	1,355,760	640,220	2,754,980
	2,459,550	1,355,760	640,220	4,455,530
Loss of scrap value of Normal loss (2200× 15000)	33,000	0	0	33000
Net cost (A)	2,426,550	1,355,760	640,220	4,422,530
Equivalent Units (B)	37,800	37,540	37,540	
Cost per equivalent unit $\frac{A}{B}$	Sh.64.1944	Sh.36.1151	Sh.17.0543	

Details		Amount Sh. „000“
Scrap A/C (Normal loss)		33,000
Abnormal loss A/C [1800(64.1944) + 1440(36.1151) + 1440(17.0543)]		192,114
Closing WIP [3000(64.1944) + 1500(36.1151) + 1500(17.053)]		272,338
Output:		
OP.WIP [240,000 + 144000 + 72000 + 1600(36.1151) + 1600(17.0543)]	541,072	
Units completed [33,000(64.1944) + 33,000(36.1151) + 33,000(17.0543)]	<u>3,873,006</u>	<u>4,414,078</u>

		4,911,530
--	--	-----------

(iv) Prepare process Q account.

DR			CR		
Details	Units	Amount Sh. „,000“	Details	Units	Amount Sh. „,000“
Opening WIP	4000	456,000	Scrap A/C (Normal loss)	2200	33,000
Units introduced	40000	1,700,000			
Direct Material		759,000	Abnormal loss A/C	1800	192,114
Direct Labour		1,355,760	Output transfer to next process	37,000	4,414,078
Overheads		640,220			
			Closing WIP	3000	272,338
	44,000	4,911,530		44,000	4,911,530

(v) Abnormal loss account.

Details	Units	Amount Sh. „,000“	Details	Units	Amount Sh. „,000“
Process Q A/C	1800	192114	Scrap A/C	1800	27000
			P & L A/C		165114
	1800	192114		1800	192114

QUESTION 2

August 2023 Question Five B

Hard Board Ltd. produces a product that passes through three processes. The data about refining process is as follows:

- Opening work in progress was 900 units at a total cost of Sh.45,000,000. The degree of completion is as follows:
 - Direct material 100%
 - Direct labour 40%
 - Production overheads 60%
- Data about refining process is as follows:

- Input of raw materials is 9,100 units for Sh.273,000,000
 - Direct labour is Sh.125,700,000
 - Production overheads is Sh.81,000,000
3. Finished units transferred to finished stores were 7,800 units.
4. Normal scrap loss was 10% of input units and the scrapped units realised Sh.30,000 per unit.
5. Units scrapped were 1,200 units with the following degrees of completion:
- Direct material 100%
 - Direct labour 70%
 - Production overheads 70%
6. Closing work in progress was 1,000 units with the following degrees of completion:
- Direct material 100%
 - Direct labour 80%
 - Production overheads 70%
7. Hard Board Ltd. uses first in first out (FIFO) method.

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Required:

Prepare the following:

- (i) Statement of equivalent units of production. (6 marks)
- (ii) Statement of cost. (4 marks)
- (iii) Statement of valuation. (3 marks)
- (iv) Refining process account. (3 marks)

ANSWER

(i) Statement of equivalent units of production.

Input		Output		Material		Labor		Overheads	
Details	Units	Details	Units		EU		EU		EU
Op WIP	900	Units completed	7800	00	7800	00	7800	100	7800
Units added	9100	Normal loss	1000	0	0	0	0	0	0
		Abnormal loss (gain)	200	100	200	70	140	70	140
		CL.WIP	1000	100	1000	80	800		700
	10000		10000		9000		8740		8640

(ii) Statement of cost.

Element of cost	Material	Labor	Overheads	Total
	sh.	sh.	sh.	sh.
Bal $\frac{b}{d}$	45,000,000	0	0	45,000,000
Current	273,000,000	125,700,000	81,000,000	479,700,000
Total cost	318,000,000	125,700,000	81,000,000	524,700,000
Less scrap (normal loss) (1000×30,000)	30,000,000	0	0	30,000,000
Net cost	288,000,000	125,700,000	81,000,000	494,700,000

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Equivalent units (EU)	9000	8740	8640
Cost per EU	Sh.32000	Sh.14382.15103	Sh.9375

(iii) Statement of valuation.

Details		Sh.
Scrap A/C (normal loss)	$[1000 \times 30,000]$	30,000,000
Abnormal loss (gain)	$[200(32000) + 140(14382.15103) + 140(9375)]$	9,726,001
Output	$[7800(32000) + 7800(14382.15103) + 7800(9375)]$	434,905,778
CL.WIP	$[1000(32000) + 800(14382.15103) + 700(9375)]$	<u>50,068,221</u>
Total		<u>524,700,000</u>

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(iv) Refining process account.

Details	Units	Amount sh.	Details	units	Amount sh.
OP WIP	900	45,000,000	Scrap A/c (normal loss)	1000	30,000,000
Units added	9100	273,000,000	Abnormal loss A/c	200	9,726,001
Direct labor		125,700,000	Output to be finished		
Production OHS		81,000,000	Stores A/c	7800	434,905,778
			cl.WIP	1000	50,068,221
	10,000	524,700,000		10,000	524,700,000

QUESTION 3

April 2023 Question One B

ABC Ltd. applies joint process costing in the production process of two joint products; AX and AY. The following information was gathered for the two joint products:

Joint Products	Production	Selling price at split-off point	Separation cost if sold at split-off	Separation costs if processed further
	Kgs	(Sh. per kg)	(Sh. per kg)	(Sh. per kg)
AX	322,000	435.90	125.90	42
AY	600,000	350.90	44.90	28

ABC Ltd. incurred the following joint Sh.“000 costs:

Conversion costs	125,000
Curing cost	80,000
Fermentation cost	<u>120,000</u>
Total joint cost	<u>325,000</u>

Required:

Calculate the total profit or loss per product if joint costs are allocated to product AX and AY on the basis of:

- (i) Sales value at split-off point. (4 marks)
- (ii) Net realisable value at split-off point. (4 marks)

ANSWER

(i) Sales value at split-off point.

working

1. Sales at slit-off point

Product		Sh
AX	$322,000 \times 435.90$	140,359,800
AY	$600,000 \times 390.5$	210,590,000
Total		350,899,800

2. Separation cost if sold at split-off point

Product		Sh
AX	$322,000 \times 125.90$	40,539,800
AY	$600,000 \times 44.90$	26,940,000
Total		67,479,800

3. Separation cost if processed further

Product		Sh
AX	$322,000 \times 42$	13,524,000
AY	$600,000 \times 28$	16,800,000
Total		30,324,000

4. Net realizable value (NRV)

Product	AX	AY	Total
Sales (W1)	140,359,800	210,540,000	350,899,800
Less separation cost if processed further (W3)	13,524,000	1,680,000	30,324,000
Total	126,835,800	208,860,000	335,695,800

5. Allocation of joint costs based on sales value at split-off point

Product	Sh.
Ax	$\frac{126,835,800}{335,695,800} \times 325,000 = 122,795$
Ay	$\frac{208,860,000}{335,695,800} \times 325,000 = 202,205$
Total	<u>325,000</u>

6. Allocation of joint costs based on NRV

Product	Sh.
Ax	$\frac{140,359,800}{350,899,800} \times 325,000 = 130,000$
Ay	$\frac{210,540,000}{350,899,800} \times 325,000 = 195,000$
Total	<u>325,000</u>

Sales value at split-off point

Product	Ax	Ay
	Sh	Sh
Sales (W1)	140,359,800	210,540,000
Less total cost:		
At split-off point (W2)	(40,539,800)	(26,940,000)
On further processing (W3)	(13,524,000)	(16,800,000)
Joint costs (W5)	<u>(130,000)</u>	<u>(195,000)</u>
Profit (Loss)	<u>86,166,000</u>	<u>166,605,000</u>

(ii) Net realisable value at split-off point.

Product	Ax	Ay
	Sh.	Sh.
Sales (W1)	140,539,800	210,540,000
Less total costs:		
At split off-point (W2)	(40,539,800)	(26,940,000)
On further processing (W3)	(13,524,000)	(16,800,000)
Joint costs (W6)	<u>(122,795)</u>	<u>(202,2050)</u>
Profit/loss	<u>86,173,205</u>	<u>166,597,795</u>

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QUESTION 4

December 2022 Question Five (a)

Summarise **FOUR** salient features of process costing systems.

(4 marks)

ANSWER

- Production is done having a continuous flow of products having a continuous flow of identical products except where plant and machinery is shut down for repairs etc.
- Clearly defined process cost centres and the accumulation of all costs by the cost centres.
- The maintenance of accurate records of units and part units produced and cost incurred by each process.
- The finished product of one process becomes the raw material of the next process or operation and so on until the final product is obtained.
- Avoidable and unavoidable losses usually arise at different stages of manufacture for various reasons.
- In order to obtain accurate average costs, it is necessary to measure the production at various stages of manufacture as all the input units may not be converted into finished goods.
- Different products with or without by-products are simultaneously produced at one or more stages or processes of manufacture. The valuation of by-products and apportionment of joint cost before joint of separation is an important aspect of this method of costing.

- Output is uniform and all units are exactly identical during one or more processes.

So the cost per unit of production can be ascertained only by averaging the expenditure incurred during a particular period.

QUESTION 5

April 2022 Question Three (b)

The following information is provided in relation to Baridi Kuu Ltd. The annual demand of its product branded 'JD' is 30,000 units. The ordering cost per order is Sh.2,500. The holding cost is expressed as a percentage of purchase price at 20%.

The following price ranges are given with their respective quantities:

Range	Quantities (Units)	Price (Sh.)
1	1-3,000	21
2	3,001-5,000	19
3	5,001-7,000	17
4	7,001-9,000	15.50
5	9,001-10,000	13

Required:

Advise the company on the quantity to purchase.

(6 marks)

ANSWER

TC 1 – 30,000

$$\begin{aligned} &= \left(\frac{30000}{3000} \times 2500 \right) + \left(\frac{3000}{2} \times \frac{20}{100} \times 21 \right) + (30000 \times 21) \\ &= 25,000 + 6,300 + 630,000 \\ &\text{Sh. 661,300} \end{aligned}$$

TC Range 3001 – 5,000

$$\begin{aligned} &\left(\frac{30000}{3001} \times 2500 \right) + \left(\frac{3001}{2} \times \frac{20}{100} \times 21 \right) + (30000 \times 19) \\ &= 24,991.67 + 5,701.90 + 570,000 \\ &= \text{Sh. 600,693.57} \end{aligned}$$

TC Range 5001 – 7,000

$$\begin{aligned} &\left(\frac{30000}{5001} \times 2500 \right) + \left(\frac{5001}{2} \times \frac{20}{100} \times 17 \right) + (30000 \times 17) \\ &= 14,997 + 8,501.70 + 510,000 \\ &\text{Sh. 533,498.70} \end{aligned}$$

TC Range 7001 – 9000

$$\begin{aligned} &\left(\frac{30000}{7001} \times 2500 \right) + \left(\frac{7001}{2} \times \frac{20}{100} \times 15.50 \right) + (30000 \times 15.50) \\ &= 10,712.75 + 10851.55 + 465000 \\ &\text{Sh. 486, 564.31} \end{aligned}$$

TC 9001 – 10,000

$$\left(\frac{30000}{9001} \times 2500 \right) + \left(\frac{9001}{2} \times \frac{20}{100} \times 13 \right) + (30000 \times 13)$$

$$= 8,332.41 + 11,701.30 + 390,000$$

Sh. 410, 033.71

Advice

Company should purchase between 9001 to 10,000 units per order because it has the lowest total cost.

QUESTION 6

December 2021 Question Two (a)

- (i) Using relevant examples, distinguish between a "joint product" and a "by product"

(4 marks)

- (ii) Zaidi Industries Ltd. produces two products branded A and B from the same material. The cost of material is Sh.9.50 per kg and the two products appear after Process I.

Product A can be sold directly to the market but product B requires further processing in Process II.

The following data relate to the month of October 2021:

	Materials	Labour	Overheads	Total
Process	Sh.	Sh.	Sh.	Sh.
I	1,440,000	210,000	150,000	1,800,000
II	=	<u>100,000</u>	<u>180,000</u>	<u>280,000</u>
	<u>1,440,000</u>	<u>310,000</u>	<u>330,000</u>	<u>2,080,000</u>

Product	Quantity sold (Kgs)	Closing stock (Kgs)	Sales (Sh.)
A	30.000	15,000	525,000
B	45.000	-	1,507,500

Additional information:

1. There were no materials on hand at the end of the month of October 2021.
2. The company uses the sales value method of apportionment for joint costs.

Required:

Determine the total cost of Products A and B. (8 marks)

ANSWER

(i) Distinction between a "joint product" and a "by product"

By-product is a product which is recovered incidentally from the material used in the manufacture of recognized main products such as having either a net realizable value or a usable value which is relatively low in comparison with the saleable value of the main products. By products may further be processed to increase their realizable value

For example, in sugar industry, sugar is a main product and molasses is a by-product

Joint product is defined as two or more products separated in the course of processing each having a sufficiently high value to merit recognition as a main product. For

example, in milk we get cream, butter and cheese while in crude oil we get fuel, gas and kerosene

It is very difficult to make distinction between the joint products, main products and by-products. There are, however, two checks which may be applied to determine if a product is a by-product or a joint product or a main product:

(i) Value: If one of the products is of considerably large value than the others it will usually be considered the main product. Conversely any product which is of considerably less value is likely to be classified as a by-product. If both or some or all the products are more or less of equal value, they are likely to be classified as joint products.

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(ii) Manufacturing objective: If the company's objective is to produce A, then B, C and D produced simultaneously will be classified as by-products. This is independent of the comparative values of the various products. If the objective is to produce A and B, they become joint products and C and D become by-products. For example, in coke oven, the objective being production of coke, this is considered as the main product, and gas and tar as by-products.

(ii) Zaidi Industries Ltd.

Total cost of product A

$$\text{Direct material} \quad \frac{525,000}{2,032,500} \times 1,440,000 = 371,956$$

$$\text{Labour} \quad \frac{525,000}{2,032,500} \times 210,000 = 54,244$$

$$\text{Overheads} \quad \frac{525,000}{2,032,500} \times 150,000 = 38,745$$

$$\text{Total cost of product A} = 464,945$$

Total cost of product B

$$\text{Direct material} \quad (1,440,000 - 371,956) = 1,068,044$$

$$\text{Labour} \quad (210,000 - 54,244) + 100,000 = 255,756$$

$$\text{Overheads} \quad (150,000 - 38,745) + 180,000 = 291,255$$

$$\text{Total cost product B} \quad \underline{1,615,055}$$

$$464,945 + 1,615,055$$

$$= \text{Sh. } 2,080,000$$

QUESTION 7

December 2021 Question Three A and C

(a) The Cost Accountant of ABC Ltd. has provided the following information relating to production of a single product branded 'Zed':

	Period 1	Period 2	Period 3
Production (Kgs)	30,000	38,000	27,000
Sales (Kgs)	30,000	27,000	38,000
Opening stock (Kgs)	-	-	11,000
Closing stock (Kgs)	-	11,000	-

Additional information:

- The financial details for one unit of product "Zed", based on a normal activity level of 30,000 Kgs is as follows:

	Cost per Kg (Sh.)
Direct material	1.50
Direct labour	1.00
Production overheads (300% of labour)	<u>3.00</u>
Total cost	<u>5.50</u>

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- The selling price of product "Zed" is Sh.9 per kg
- Administrative overheads are fixed at Sh.25,000 per period whereas one third of production overheads are fixed.

Required:

Prepare operating statement using:

- Variable costing. (6 marks)

(ii) Absorption costing:

(6 marks)

(c) Britkon Ltd. makes a single product branded "P" with a sales price of Sh.100 and a variable cost of Sh.60. Fixed costs are Sh.600,000 per annum.

Required:

(i) Assuming the taxation rate is 40%. determine the number of units to be sold to make a profit after tax of Sh.200,000 per annum. (2 marks)

(ii) As a result of increasing costs, the variable cost is expected to rise to Sh.65 per unit and fixed costs to Sh.700,000 per annum.

Assuming the selling price cannot be increased, determine the number of units required to maintain a profit of Sh.200,000 per annum.

(Ignore inflation).

(2 marks)

ANSWER

(a) ABC Ltd

(i) Variable costing.

	Period 1		Period 2		Period 3	
	Sh.	Sh	Sh.	Sh.	Sh.	Sh.
Sales		270,000		243,000		342,000
Less: Sale costs						342,000

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Opening stock	0		0		49,500	
Material	45,000		57,000		40,500	
Labour	30,000		38,000		27,000	
Variable overheads	<u>60,000</u>		<u>76,000</u>		<u>54,000</u>	
	135,000		171,000		171,000	
Less: Closings	0	135,000	49,500	121,500	0	171,000
Contribution		135,000		121,500		171,000
Less:						
Admin		25,000		25,000		25,000
Fixed production		<u>30,000</u>		<u>38,000</u>		<u>27,000</u>
Net profit		<u>80,000</u>		<u>58,500</u>		<u>119,000</u>

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(ii) Absorption costing:

	Period 1		Period 2		Period 3	
	Sh	Sh	Sh.	Sh	Sh	Sh
Sales		270,000		243,000		342,000
Less: Sales cost						
Opening stock	0		0		60,500	
Material	45,000		57,000		40,500	
Labour	30,000		38,000		27,000	
Overhead	90,000		<u>114,000</u>		81,000	
	165,000		209,000		<u>209,000</u>	

Less: Closing stock	<u>0</u>	<u>165,000</u>	<u>60,500</u>	<u>148,500</u>	<u>0</u>	<u>209,000</u>
Gross profit		105,000		94,500		133,000
Admin costs		25,000		25,000		25,000
Net profit		80,000		69,500		108,000

(c) Britkon Ltd.

(i) Number of units to be sold to make a profit after tax of Sh.200,000 per annum

Contribution per unit = selling price per unit – variable cost per unit

$$100 - 60$$

$$= \text{Sh. 40 per unit}$$

$$\text{BEP units} = \frac{\text{Fixed cost} + \text{target profit}}{\text{Contribution per unit}}$$

$$= \frac{600,000 + \frac{100}{60} \times 200,000}{40}$$

$$= 23,333 \text{ units}$$

(ii) The number of units required to maintain a profit of Sh.200,000 per annum.

$$\frac{700,000 + \left(200,000 \times \frac{100}{60}\right)}{35}$$

$$= 29,524 \text{ units}$$

QUESTION 8

September 2021 Question Three A

FMS Clinix Ltd. operates two hospitals in a remote area; thus subsidising the cost of its services.

The following information relating to the two hospitals over the last one year is provided:

	Mashariki Hospital	Kusini Hospital
Number of hospital beds	780	500
Number of in-patients	23,472	8,165
Average stay	7 1 / 2days	?
Number of outpatient visits	216,500	63,920

? Not recorded but bed occupation percentage was 85%.

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Additional information:

- The following information was provided by the accountants based on the two hospitals:

	Mashariki Hospital		Kusini Hospital	
	Inpatients	Outpatients	Inpatients	Outpatients
Direct costs:	Sh.	Sh.	Sh.	Sh.
Supplies and drugs	1,821,520	693,600	1,551,350	285,450
Medical staff	8,729,100	3,308,950	6,832,700	1,975,050
Support services	2,210,500	2,563,700	1,845,380	1,591,620
Indirect costs:				

General services	<u>3,524,470</u>	<u>1,721,800</u>	<u>1,937,410</u>	<u>635,600</u>
Totals	<u>16,285,590</u>	<u>8,288,050</u>	<u>12,166,840</u>	<u>4,487,720</u>

2. Assume a 365-days year.

Required:

- (i) Average length of stay at Kusini Hospital. (3 marks)
- (ii) Bed occupation percentage in Mashariki Hospital (3 marks)
- (iii) Cost per in-patient day for both hospitals. (4 marks)
- (iv) Cost per out-patient attendance for both hospitals. (4 marks)

ANSWER

FMS Clinix Ltd.

- (i) Average length of stay at Kusini Hospital.**

$$500 \text{ beds} \times 365 \text{ days} = 182,500$$

$$85\% \text{ Occupancy} = 182,500 \times 0.85$$

$$= 155,125 \text{ in patient days}$$

$$\text{Average stay} = \frac{155,125}{8,165} = 19 \text{ days}$$

- (ii) Bed occupation percentage in Mashariki Hospital**

$$= \frac{\text{Actual in patient days}}{\text{Potential in patient days}} \times 100$$

$$\frac{23,472 \times 7.50}{780 \times 365} \times 100$$

$$= 62\%$$

(iii) Cost per in-patient day for both hospitals.

$$\frac{16,285,590}{23,472 \times 7.5}$$

$$= \text{Sh } 92.51$$

$$\frac{16,166,840}{8,165 \times 19}$$

$$= \text{Sh. } 78.43$$

(iv) Cost per out-patient attendance for both hospitals.

$$\frac{\text{Cost of outpatients}}{\text{No. of outpatient attendees}}$$

$$\frac{8,288,050}{216,500}$$

$$= \text{Sh. } 38.28$$

$$= \frac{4,487,720}{63,920}$$

$$= \text{Sh. } 70.21$$

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QUESTION 9

September 2021 Question Five A

Double B Ltd. manufactures a chemical that passes through three production processes namely; 1, 2 and 3. In the month of June 2021, 6,000 litres of the basic raw materials priced at Sh.240,000 were introduced into process 1.

Subsequently, the following costs were incurred:

Element of cost	Total	Process		
		1	2	3
	Sh.	Sh.	Sh.	Sh.
Direct materials				
(additional)	87,500	30,000	40,000	17,500
Direct labour	110,000	40,000	50,000	20,000
Direct expenses	16,900	6,000	1,600	9,300

Additional information:

1. Normal output per process was estimated as follows:

Process 1 90%

Process 2 95%

Process 3 92%

2. The output of each process was as given below:

	Litres
Process 1	5,300
Process 2	5,000
Process 3	4,700

3. The loss in each process represented scrap which could be sold at the following prices:

Price per unit (Sh.)

Process 1	20
Process 2	44
Process 3	65

4. There were no stocks of materials or work-in-progress at the beginning or end of the period.
5. The output of each process passes directly to the next process and finally to finished goods.
6. Production overhead is absorbed by each process on a basis of 50% of the cost of direct labour.

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Required

- | | | |
|-------|------------------------|-----------|
| (i) | Process 1 account. | (3 marks) |
| (ii) | Process 2 account. | (3 marks) |
| (iii) | Process 3 account. | (3 marks) |
| (iv) | Abnormal loss account. | (2 marks) |
| (v) | Abnormal gain account. | (1 mark) |

ANSWER

Double B Ltd.

Required

(i) Process 1 account.

Process 1 Account							
	Units	Cost per unit	Amount		Units	Cost per unit	Amount
Direct material	6000	40	240,000	Normal A/C	600	20	12000
Direct material (Additional)			30,000	Abnormal loss	100	60	6000
Direct labour			40,000	To phase 2	5300	60	318,000
Direct expenses			6000				
Production overheads	—		<u>20,000</u>		—	—	—
	<u>6000</u>		<u>336,000</u>		<u>6000</u>	=	<u>336,000</u>

(ii) Process 2 account.

Process 2 Account							
	Units	Cost per unit	Amount		Units	Cost per unit	Amount
Process 1	5300	60	318000	Normal loss	265	44	11,660
Direct material			40000	Abnormal loss	35	84	2940
Direct labour			50000	To process 3	5000	84	420000
Direct expense			1600				

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Purchasing overheads			25000				
	5300	-	434600		5300	-	43600

(iii) Process 3 account.

Process 3 Account							
	units	Cost per unit	Amount		Units	Cost per unit	Amount
Process 2	5000	84	420,000	Normal loss	400	65	26000
Direct material			17,500	Good stock	4700	98	460000
Direct labour			20,000				
Direct expense			9,300				
Production overheads			10,000				
Abnormal gain	—	—	9,800		—	—	—
	<u>5100</u>		<u>486,600</u>			<u>5100</u>	<u>486,600</u>

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(iv) Abnormal loss account.

	Units	Cost per unit	Amount		Units	Cost per unit	Amount
Process 1	100	60	6000	Sales A/C process 1	100	20	2000

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Process 2	35	84	2,940	Process 2	35	44	1,540
			_____	Profit and loss			<u>5,400</u>
	<u>135</u>		<u>8,940</u>		<u>135</u>		<u>8,940</u>

(v) Abnormal gain account.

	Units	Cost per unit	Amount		Units	Cost per unit	Amount
Sales A/C	100	65	6,500	Process 3	100	98	9800
Process 3							
Profit and loss A/C	_____		<u>3,300</u>		_____		_____
	<u>100</u>		<u>9,800</u>		<u>100</u>		<u>9800</u>

QUESTION 10

November 2020 Question One A

Mejwa Ltd. is a manufacturing firm operating in the textile industry. The company recorded the following transactions in relation to product BT during the month of January 2020:

Date	Purchases		Sales	
	Quantity	Unit price	Quantity	Unit price
	(Units)	Sh.	(Units)	Sh.
January: 1	12,000	150		
3	8,000	160		
7			12,000	200
8	10,000	155		
13			5,000	210

17			8,000	205
20	12,000	140		
23	7,000	152.5		
25			11,000	200
27			10,000	202.5
31			200	212

Additional information:

1. The opening inventory of product BT on 1 January 2020 comprised of 9,500 units purchased at a cost of Sh.135 per unit.
2. On. 9 January 2020, the company reported a shortage of 300 units.
3. On 19 January 2020, 600 units of the units sold on 17 January 2020 were returned by the customer.

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Required:

- (i) A store ledger account for the month of January 2020 using first in first out (FIFO) method of inventory valuation. (10 marks)
- (ii) The value of the closing stock. (2 marks)

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ANSWER

(i) Store ledger card for the month of January 2020 using FIFO method

DATE	RECEIPTS			ISSUES			BALANCE		
	Quantity	Rate	Value	Quantity	Rate	Value	Quantity	Rate	Value
1/1/'20							9,500	135	1,282,500
1/1/'20	12,000	150	1,800,000				21,500		3,082,500
3/1/'20	8,000	160	1,280,000				29,500		4,362,500
7/1/'20				9,500	135	1,282,500			
				<u>2,500</u>	150	<u>37,500</u>			
				12,000		1,657,500	17,500		2,705,000
8/1/'20	10,000	155	1,550,000				27,500		4,255,000
9/1/'20				300	155	46,500	27,200		4,208,500
13/1/'20				5,000	150	750,000	22,200		3,458,500
17/1/'20				4,500	150	675,000			
				<u>3,500</u>	160	<u>560,000</u>			
				8,000		1,235,000	14,200		2,223,500
19/1/'20	600	160	96,000				14,800		2,319,500
20/1/'20	12,00	140	1,680,000				26,800		3,999,500
23/1/'20	7,000	152.5	1,067,500				33,800		5,067,000
25/1/'20				4,500	160	720,000			
				<u>6,500</u>	155	<u>1,007,500</u>			
				11,000		1,727,500	22,800		3,339,500
27/1/'20				3,500	155	542,500			
				600	160	96,000			
				<u>5,900</u>	140	<u>826,000</u>			
				10,000		1,464,500	12,800		1,875,000
31/1/'20				200	140	28,000	12,600		1,847,000

The value of the closing stock is Sh. **1,847,000**

QUESTION 11

November 2020 Question Five C

BIX Feeds Ltd. operates several production processes involving the mixing of ingredients to produce bulk animal feedstuffs. Its main product branded "HW" undergoes two processes; Process 1 and Process 2.

The following information relates to Process 2 for the period under consideration:

Costs incurred	Sh.
Transfers from Process 1	18,770,400
Raw materials cost	4,797,200
Conversion costs	6,317,600
Opening work-in-progress	300,900

Production:	Units
Opening work-in-progress	1,200
(100% complete, apart from Process 2 conversion Costs which were 50% complete)	
Transfers from Process 1	112,000
Completed output	105,400
Closing work-in-progress	1,600
(100% complete apart from Process 2 conversion Costs which were 75% complete)	

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Additional information:

1. Normal wastage of materials (including product transferred from Process 1), which, occurs in the early stages of Process 2 (after all materials have been added), is expected to be 5% of input.
2. Process 2 conversion costs are all apportioned to units of good output.
3. Wastage materials have no saleable value.

Required:

Process 2 account for the period, using the First-in-First-Out (FIFO) method.

(10 marks)

ANSWER

Statement of equivalent production

Input	Output	Material 1	Material 2	Conversion
Process 112,000	Opening WIP 1,200	-	1,200	600
Opening WIP 1,200	Completed 104,200 output	104,200	104,200	104,200
	Normal loss 5,660	-		
	Abnormal loss 540	540	540	540
	Closing WIP <u>1,600</u>	1,600	1,600	1,600
<u>113,200</u>	<u>113,200</u>			
Equivalent production		<u>106,340</u>	<u>107,540</u>	<u>106,540</u>

Normal loss = $5\% \times 113,200 = 5,660$

Abnormal loss = 6,200 – 5,660 = 540

Actual loss = 6,200

Statement of cost

Details	Material 1	Material 2	Conversion
Transfer cost	18,770,400	4,797,200	6,317,600
Less: Scrap	-	-	-
Estimated cost	18,770,400	4,797,200	6,317,600
Equivalent production	106,340	107,540	106,540
Unit cost	176.513	44.6025	59.2979

Statement of evaluation

Details	Material 1	Material 2	Conversion	Total
Opening WIP	-	53,530.20	35,578.79	89,108.94
	18,392,654.6	4,643,205.70	6,178,841.18	29,219,701.40
Abnormal loss	95,317.02	24,088.54	32,020.866	151,426.46
Closing WIP	282,420.8	71,373.6	71,157.48	424,951.88

Determination of costs to be transferred to finished goods

Cost attached to opening WIP + cost of converting + cost of opening WIP

300,900 + 89,108.94 + 29,219,701.48

Ksh. 29,609,710.42.

Process II Account

Details	Units	value	Details	Units	Value
Process 1	112,000	18,770,400	Finished goods	105, 400	29,609,710.42
Materials		4,797,200	Normal loss	5,660	-
Conversion		6,317,600	Abnormal loss	540	151,426.476
Opening up	1,200	300,900	Closing WIP	1,600	424,951.88
		30,186,100		113,200	30,186,088.76

QUESTION 12

November 2019 Question Four A and B

(a) Explain three differences between job costing and process costing. (6 marks)

(b) Granite City Works (GCW) Ltd. is a manufacturer of cemetery headstones and architectural granite slabs. The company excavates blocks of granite from its joint processes of Quarry and Cutting. Two joint products; Cemetery monuments and Architectural granite are produced along with a by-product called "grit".

Cemetery monuments are cut, polished and engraved in a variety of standard shapes, sizes and patterns and sold to funeral homes. Architectural granite slabs are special-ordered by contractors for office buildings. These slabs are cut and polished to the exact customer's specifications. The small pieces of granite resulting from the cutting process are crushed and sold to farm-supply outlets as poultry grit.

Additional information:

1. GCW Ltd. has provided the following output and cost information:

Process	Output (Tons)	Cost (Sh. "000")
Quarry	100,000	350,000
Cutting	90,000	250,000
Monuments	25,000	300,000
Granite slabs	60,000	400,000
Grit	5,000	10,000

2. A local distributor purchases all of the grit that is produced at a price of Sh.40,000 per ton.

3. Assume that the company uses the physical units method to allocate joint costs.

Required:

The cost per ton of monuments and granite slabs, assuming that the grit is accounted for as:

(i) Other income. (8 marks)

(i) By-product revenue deducted from the main product cost. (6 marks)

ANSWER

a) Differences between job costing and process costing

Job costing	Process costing
It is used for unique products	Used for standardized products
Used for very small production runs	Used for large production runs
Much more record keeping is required for job costing since time and material must be charged to specific jobs	It aggregates costs and so requires less record keeping

b) i) Assuming grit is treated like other income

TOTAL JOINT COST

Quarry	350,000
Cutting	250,000
Total	600,000

Allocation using physical unit method

Measurements	25000
Granite slabs	60,000
Total	85000 units

Allocation

$$\text{Measurements} = \frac{25000}{85000} \times 600,000 = \text{Sh } 176,471$$

$$\text{Granite slabs} = \frac{60000}{85000} \times 600,000 = \text{Sh } 423,529$$

Cost schedule		
Details	Monuments	Granite Slabs
Joint cost	176471	423529
Separable cost	300,000	4000,000
Total cost	476,471	823529
Less other income		
Grit (200000-50000)		(150,000)
	476471	673529
Output (tones)	25000	60000
Cost/tonnes(sh)	19.0588	11.2255

ii) By product revenue deducted from the main product cost

Details	Monuments	Granite Slabs
joint cost	176471	423529
Separable cost	300,000	4000,000
total cost	476,471	823529
Add by product cost		50,000
less by product cost	-	(200,000)
	476471	673529
output (tones)	25000	60000
cost/tonnes(sh)	19.0588	11.2255

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QUESTION 13

May 2019 Question Four B

The following information was obtained from the books of Mambo Yote Ltd., a manufacturing company based in a coastal town for the month of April 2019:

Opening inventory (Units)	50,000
Valuation	Sh.
Materials	250,000
Labour	100,000
Overheads	250,000
Units introduced	200,000
Cost incurred	Sh.
Materials	1,000,000
Wages	750,000
Overheads	700,000

Additional information:

1. During the month of April 2019, 150,000 units were completed and transferred to process II.
2. Closing inventory amounted to 100,000 units with the following degrees of completion:

Materials	100%
Labour	50%
Overheads	40%

3. Due to the nature of the production process, no losses are anticipated.
4. The company uses the average cost method to value work-in-progress.

Required:

- (i) Statement of equivalent production. (4 marks)
- (ii) Statement of apportionment of cost. (6 marks)
- (iii) Process I account. (6 marks)

ANSWER

i) Statement of equivalent production

W1 Closing inventory working

$$\text{Materials} = \frac{100}{100} \times 100,000 = 100,000 \text{ units}$$

$$\text{Labour} = \frac{50}{100} \times 100,000 = 50,000 \text{ units}$$

$$\text{Overheads} = \frac{40}{100} \times 100,000 = 40,000 \text{ units}$$

Statements of equivalent production			
	Materials	Labour	Overheads
Units completed & transferred	150,000	150,000	150,000
Closing inventory (W1)	100,000	50,000	40,000
Equivalent units	250,000	200,000	190,000

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ii) Statement of apportionment of cost

Mambo yote ltd			
Apportionment cost statement			
	Materials	Labour	Overheads
Opening inventory	250,000	100,000	250,000
Cost incurred	1,000,000	750,000	700,000
Total cost	1250000	850,000	950,000
Number of units b	250,000	200,000	190,000
Cost per units a/b	5.00	4.25	5.00

iii) Process I Account

Process 1 Account							
Details	Units	Price Sh	Amount Sh.	Details	Units	Price Sh.	Amount Sh.
Opening stock(W2)	50,000	12	600,000	Units Transferred	150,000	14.25	2,137,500
Materials	200,000	5	1,000,000	Closing Inventory	100,000	9.125	912,500
Labour	250,000		750,000				
Overheads	_____		<u>700,000</u>		_____		_____
	<u>250,000</u>		<u>3,050,000</u>		<u>250,000</u>		<u>3,050,000</u>

Working 2 valuation opening inventory

$$= (250 + 100,000 + 250,000) \div 50,000$$

$$= \text{Sh. } 600,000 \div 50,000$$

$$= \text{Sh}12$$

Working 3 closing inventory valuation

Material cost	100,000x5	500,000
Labour cost	50,000x4.25	212,500
Overhead cost	40,000x5.00	200,000
Total cost		912,500

$$\text{Cost per unit} = 912,500 \div 100,000$$

$$= 9.125$$

QUESTION 14

November 2018 Question Four B

The following information was obtained from the books of Brickmast Ltd., a company making bricks for sale to contractors in the construction industry:

1. Materials: M 1,800 tonnes at Sh.40 per ton.

N Sh.45,640

2. Labour: Direct Sh.25,560

Indirect Sh.8,640

3. Overheads: Works 25% of direct costs

Office 20% of prime cost and works overhead cost

4. Sales Sh. 7, 400,000. Sales per brick amount to Sh.400.

5. Royalties are paid at the rate of Sh.0.5 per 1,000 bricks.

6. The production is in batches of 1,000 bricks.

7. Stock of finished bricks: Opening 800,000

Closing 600,000

Required:

(i) Batch cost statement. (6 marks)

(ii) Profit per 1,000 bricks. (2 marks)

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ANSWER

(i) Brick mast Ltd Batch cost statements

Brick mast Ltd		
Batch cost statements		
Material : M	1800×40	72,000
N		45,640
Direct labour		25,560
Prime cost		143,200
Indirect labour		8,640
Work overheads	(0.25×143,200)	35,800
Office overheads	(0.2×(14,320+35,800))	35,800
Royalties		0.50
Total cost per batch		223,440.50

ii) Profit per 1000 bricks

	Sh
Sales per batch 1000×40	400,000
Less cost per batch	(223,440.50)
Profit per batch	176,559.50

QUESTION 15

November 2017 Question Five B

Tegemeo Ltd manufactures a product which yields three joint products namely; H, N and T.

The joint products are then processed further in a common process which consists of two consecutive stages.

The data below relate to the month of August 2017:

	Process 1	Process 2
	Sh.	Sh.
Direct materials (30,000 units at Sh. 20 per unit)	600,000	-
Conversion costs	765,000	2,262,000
Scrap value of normal loss per unit	5	20

Additional information:

1. The output in process 1 is transferred to process 2 and amounted to 26,000 units.
2. The output in process 2 consists of three joint products as follows

Product	H	N	T
Quantity (units)	10,000	7,000	6,000

3. The normal loss for both process 1 and process 2 is 10%.
4. The unit selling prices for H, N and T are Sh.180, Sh.200 and Sh.300 respectively.
5. All joint products are sold as soon as they are produced.
6. Sales value method of joint costs apportionment is used.

Required:

- i. Process 1 account. (4 marks)
- ii. Process 2 account. (6 marks)

- iii. Income statement for the joint products. (4 marks)

ANSWER

Process 1 account

Statement of equivalent units process 1

	Total units	Equivalent units
Output to process 2	26,000	26,000
Normal loss (10%×30,000)	3,000	-
Abnormal loss (balancing figure)	<u>1,000</u>	<u>1,000</u>
	<u>30,000</u>	<u>27,000</u>

Process 1 costs	Sh.
Direct materials	600,000
Conversion cost	<u>765,000</u>
	1,365,000
Less: Scrap value of normal (3000×5)	<u>(15,000)</u>
	<u>1,350,000</u>

$$\text{Cost per equivalent unit} = \frac{1,350,000}{27,000} = sh. 50$$

Process 1 account

	Units	Price	Amount		Units	Price	Amount
Direct materials	30,000	20	600,000	Process 2	26,000	50	1,300,000
Conversion cost			765,000	Normal loss	3,000	5	15,000
			-	Abnormal loss	1,000	50	50,000
	30,000		<u>1,365,000</u>		30,000		<u>1,365,000</u>

ii) Process 2 account

Statement of equivalent units process 2		
	Total units	Equivalent units
Units produced: H	10,000	10,000
N	7,000	7,000
T	6,000	6,000
Normal loss (10%×26,000)	2,600	-
Abnormal loss (balancing figure)	<u>400</u>	<u>400</u>
	<u>26,000</u>	<u>23,400</u>

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Process 2 costs

	Sh.
Transfer cost from process 1	1,300,000
Conversion costs	<u>2,262,000</u>
	3,562,000
Less: Scrap - normal loss (2,600 × 20)	<u>(52,000)</u>
	<u>3,510,000</u>

$$\text{Cost per equivalent unit} = \frac{3,510,000}{23,400} = sh. 150$$

$$\text{Cost of good Produced} = (10,000 \times 150) + (7,000 \times 150) + (6,000 \times 150)$$

$$= sh. 3,450,000$$

Apportionment of Process 1 costs on sales value basis:

Product	Sales Amount
H	$10,000 \times 180 = 1,800,000$
N	$7,000 \times 200 = 1,400,000$
T	$6,000 \times 300 = 1,800,000$
Total	5,000,000

Apportionment of Process 2 costs on sales value basis:

Product	Apportioned Process 2 costs
H	$\frac{1,800,000}{5,000,000} \times 3,450,000 = 1,242,000$
N	$\frac{1,800,000}{5,000,000} \times 3,450,000 = 966,000$
T	$\frac{1,800,000}{5,000,000} \times 3,450,000 = 1,242,000$

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Process 2 account							
	Units	Price Sh.	Amount Sh.		Units	Price Sh.	Amount Sh.
Process 1	26,000	50	1,300,000	To finished goods a/c			1,242,000
Conversion cost			2,262,000	H	10,000		966,000
				N	7,000		1,242,000
				T	6,000		62,000
				Scrap of normal loss	2,600	50	60,000
	-		-	Abnormal loss	<u>400</u>		-
	<u>26,000</u>		<u>3,562,000</u>		<u>26,000</u>		<u>3,562,000</u>

iii) Income statement for the joint Products

	H	N	T
	Sh.	Sh.	Sh.
Sales	1,800,000	1,400,000	1,800,000
Less costs	<u>(1,242,000)</u>	<u>(966,000)</u>	<u>(1,242,000)</u>
Profit	<u>558,000</u>	<u>434,000</u>	<u>558,000</u>

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QUESTION 16

Pilot paper 2015 Question One

(a) New Colour Limited manufactures two joint products Exe and Wye. A by product Zed is also produced. Output from Process One is transferred to Process Two where the joint products emerge. The following information is available for July 2015:

1. Process One cost data:

Raw material inputs (40,000 kgs)	Sh.9,620,000
Direct wages	Sh. 7,650,000

Overheads	Sh. 11,050,000
Output:	
Transferred to Process Two	30,000 Kgs.
By product Zed	2,000 Kgs.
Closing work in progress (50% complete as to conversion costs)	8,000 Kgs.

2. By product Zed retails at Sh.75 per kg. Additional selling costs amount to Sh.15 per kg. 500 kgs. were sold in July 2015.

3. Process Two cost data:

Additional direct materials	Sh.3,852,500
Direct wages	Sh.6,099,609.5
Overheads	Sh.3,828,750
Output:	
Finished goods (Exe and Wye)	28,000 Kgs.
Losses in the process	2,000 Kgs.

4. The output is produced in the ratio of 2:3 for products Exe and Wye respectively.
5. Normal loss in the process is 2.5%. Scrap value per unit is Sh.200.

6. The selling price per unit of each product is as follows:

Exe. Sh.2,000 per Kg.

Wye Sh.1,218.75 per Kg.

7. Joint costs are allocated on the basis of sales revenue at separation point.

Required:

(i) Statement of production for Process One. (8 marks)

(ii) Process Two account. (8 marks)

(b) In the context of service costing, explain the main features of a service. (4 marks)

ANSWER

a) i) Statement of production for process one

Statement of production for process one									
Inputs	Units	Output	Units	D. Material		Labour		Overhead	
					%		%		%
Opennig WIP	-	Normal loss	1000	-	-	-	-	-	-
Material input	40000	By Product	2000	-	-	-	-	-	-
		Abnormal loss	1000	1000	100%	1000	100%	1000	100%
		To Process 2	30000	30000	100%	30000	100%	30000	100%
		Closing WIP	8000	8000	100%	4000	50%	4000	100%
			42000	39000		35000		35000	

Cost per unit statement:

Elements of cost		Units	Cost per unit
Raw materials	9,620,000		
Less: Scrap value for:			
Normal Loss 1000×200	(200,000)		
Less: By product			
$(2,000 \times 75 - 15 \times 2,000)$	<u>(120,000)</u>		
	9,300,000	39,000	238.46
Labour	7,650,000	35,000	218.57
Overhead	1,105,000	35,000	31.57

Valuation of Abnormal loss:

Material	1000×238.460	238,460
Labour	1000×218.570	218,570
Overhead	1000×31.57	<u>31,570</u>
		<u>488,600</u>

Valuation of Closing WIP:

Material	8000×238.460	1,907,680
Labour	4000×218.570	874,280
Overhead	4000×31.57	<u>126,280</u>
		<u>2,908,240</u>

Valuation of goods transported:

Material	$30,000 \times 238.460$	7,153,800
Labour	$30,000 \times 218.570$	6,557,100

Overhead	30,000×31.57	<u>947,100</u>
		<u>14,658,000</u>

Units transferred.

Units started and transferred 14,658,000

Joint Allocation:

$$\text{Exe} = \frac{2}{5} \times 14,658,000 = 5,863,200$$

$$\text{Wyre} = \frac{3}{5} \times 14,658,000 = 8,794,800$$

ii) Process Two accounts

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Process Two accounts						
	Unit	Cost	Value		Unit	Cost Value
Raw materials	40,000		9,620,000	Exe		5,863,200
Labour			7,650,000	Wyre		8,794,800
Overheads			1,105,000	Abnormal loss		488,600
				Normal loss	1000	200,000
				Closing WIP		2,908,240
			18,375,000			18,254,840

b) Features of services costing

1. Direct material cost is not one of the main cost incurred
2. The main cost of operation is labour cost and other overhead

TOPIC 7

MARGINAL AND ABSORPTION COSTING

QUESTION 1

April 2024 Question One C

OJ Ltd. manufactures and sells mobile phones. The company's budgeted statement of profit or loss for the month of May 2024 is as follows:

	Sh.	Sh.
Sales (1,200 units at Sh.18,000 per unit)		21,600,000
Less: Cost of sales:		
Production (1,800 units at Sh.10,000 per unit)	18,000,000	
Less: Closing inventory (600 units at Sh.10,000 per unit)	<u>(6,000,000)</u>	<u>(12,000,000)</u>
Gross profit		9,600,000
Less: Variable selling expenses (10% of sales)		<u>(2,160,000)</u>
Fixed selling and distribution costs		<u>(1,705,000)</u>
Net profit		<u>5,735,000</u>

Additional information:

- The budget was prepared using absorption costing principle.
- If the budgeted production in May 2024 had been 2,000 units, then the total production cost would have been Sh.18,800,000.

Assuming the budget of OJ Ltd. for the month of May 2024 had been prepared using marginal costing principle, calculate:

- The net profit. (5 marks)
- The break-even point (BEP) in sales value. (3 marks)

ANSWER

(i) The net profit.

	Sh.	Sh.
Sales (1200 units at 1800 per unit)		21,600,000
Less marginal production cost of sales:		
Production (1800 units at sh.4000 per unit)	7,200,000	
Closing inventory(600 units at sh.4000 per unit)	<u>(2,400,000)</u>	<u>(4,800,000)</u>
Gross contribution		16,800,000
Less other variable costs:		
Selling expenses (10% of sales)		<u>(2,160,000)</u>
Net contribution		14,640,000
Less total fixed costs:		
Production overheads	10,800,000	
Selling and distributions costs	<u>1,705,000</u>	<u>(12,505,000)</u>
Net profit		<u>2,135,000</u>

(ii) The break-even point (BEP) in sales value.

$$\begin{aligned}
 &= \left[\frac{\text{Total fixed costs}}{\text{contribution per unit}} \right] \times \text{selling price} \\
 &= \left[\frac{10,800,000 + 1,705,000}{18000 - [4000 + 10\%(18000)]} \right] \times 18000 \\
 &= \left[\frac{\text{sh.}12,505,000}{\text{sh.}12,200 \text{ per unit}} \right] \times 18,000 \\
 &= 1025 \text{ units} \times \text{sh. } 18000 \text{ per unit} \\
 &= \text{sh. } 18,450,000
 \end{aligned}$$

QUESTION 2

December 2023 Question Four A

Melta Ltd. has just completed its first year in operation. The unit costs and selling price based on absorption costing basis are as follows:

Standard cost and selling price: Sh.

Direct material (2 kilograms at 350 per kilogram) 700

Direct labour (0.5 hours at Sh.1,600 per hour) 800

Production overhead:

Variable overheads (0.5 hours at Sh.600 per hour) 300

Fixed overheads (0.5 hours at Sh.900 per hour) 450

Standard production cost 2,250

Standard profit margin 2,750

Standard selling price 5,000

Additional information:

- Other budgeted costs during the period in relation to selling and distribution and administration were as follows:

	Variable costs	Fixed costs (Sh.)
Selling and distribution	10% of sales	9,000,000
Administration	12,300,000	

- During the year, the company had the following activity levels:
 - Actual production was 24,000 units.
 - Units sold were 21,300 units.
- Actual fixed production overheads was Sh.300,000 less than absorbed fixed production overheads.

4. Budgeted fixed selling and distribution overheads were Sh.50,000 less than the actual fixed overheads.
5. Melta Ltd. used an expected activity level of 24,000 direct labour hours to compute the predetermined overhead rates.

Required:

Prepare the following operating statements:

- (i) Absorption costing profit or loss statement. (6 marks)
- (ii) Marginal costing profit or loss statement. (6 marks)
- (iii) A reconciliation statement for absorption and marginal profits. (2 marks)

ANSWER

Prepare the following operating statements:

- (i) **Absorption costing profit or loss statement.**

	Sh. „000“	Sh. „000“
Sales (21300×5000)		106500
<u>Less full production cost:</u>		
Op. inventory (0×2250)	0	
Production (24000×2250)	54000	
cl. inventory (2700×2250)	(6075)	<u>(47925)</u>
Gross profit		58575
<u>Less other costs:</u>		
Variable selling and distribution (10% sales)	10,650	
Fixed selling and distribution (w_4)	8950	

Fixed administration	12,300	<u>(31,900)</u>
		26,675
Under (over) absorbed fixed production OHS (w_3)		300
Under (over) absorbed fixed selling and distribution OHS (w_4)		<u>(50)</u>
Profit (loss)		<u>26925</u>

(ii) **Marginal costing profit or loss statement.**

Melta Ltd.

Marginal costing profit or loss statement

	Sh. „000“	Sh. „000“
Sales (21300×5000)		106500
<u>Less Marginal Production cost:</u>		
Op. inventory (0×1800)	0	
Production (24000×1800)	43200	
Cl. Inventory (2700×1800)	<u>(4860)</u>	<u>(38340)</u>
Gross contribution		68160
Less variable selling and distribution OHS (10% sales)		(10650)
Net contribution		57510
<u>Less total Fixed costs</u>		
Production OHS (w_3)	10500	
Selling and distribution OHS	<u>9000</u>	
Administration OHS	<u>12300</u>	<u>(31800)</u>
Profit (loss)		25710

(iii) A reconciliation statement for absorption and marginal profits.

	Sh. „000“
Marginal profit (loss)	25710
Add difference in closing inventory (6075 – 4860)	<u>1215</u>
	26925
Less difference in opening inventory (0 – 0)	0
Absorption Profit (loss)	<u>26925</u>

QUESTION 3

April 2023 Question Four

- (a) Discuss **FOUR** limitations that a firm might encounter when operating a marginal costing system. (8 marks)
- (b) Grate Ltd. manufactures and sells a single product branded –GL”. The cost data for the product is as follows:

Variable cost per unit:	Sh.
Direct materials	60
Direct labour	120
Variable production overhead	40
Fixed production overhead	80
Variable selling overhead	<u>30</u>
	<u>330</u>
Fixed cost per month:	Sh.
Fixed production overhead	2,400,000
Fixed selling overhead	<u>1,800,000</u>
	<u>4,200,000</u>

Additional information:

1. The product is sold for Sh.400 per unit.
2. Grate Ltd. budgeted to produce and sell 30,000 units per month.
3. Actual production and sales units for the months of January 2023 and February 2023 are as follows:

	Production	Sales
	(units)	(units)
January	30,000	26,000
February	30,000	34,000

4. There was no opening inventory or work-in-progress as at the start of January 2023.

Required:

Prepare profit or loss statements based on:

- (i) Marginal costing technique. (6 marks)
- (ii) Absorption costing technique. (6 marks)

ANSWER

a) Limitations of marginal costing system.

- The separation of costs into fixed and variable presents technical difficulties and no variable cost is completely variable nor is a fixed cost completely fixed.

- Under the marginal cost system, stock of finished goods and work-in-progress are understated. After all, fixed costs are incurred in order to manufacture products and as such, these should form a part of the cost of the products. It is, therefore, not correct to eliminate fixed costs from finished stock and work-in-progress.
- The exclusion of fixed overhead from the inventories affects the Profit and Loss Account and produces an unrealistic and conservative Balance Sheet, unless adjustments are made in the financial accounts at the end of the period.
- In marginal costing system, marginal contribution and profits increase or decrease with changes in sales volume. Where sales are seasonal, profits fluctuate from period to period. Monthly operating statements under the marginal costing system will not, therefore, be as realistic or useful as in absorption costing.
- During the earlier stages of a period of recession, the low profits or increase in losses, as revealed in a magnified way in the marginal costs statements, may unduly create panic and compel the management to take action that may lead to further depression of the market.
- Marginal costing does not give full information. For example, increased production and sales may be due to extensive use of existing equipment (by working overtime or in shifts), or by an expansion of the resources, or by the replacement of labour force by machines. The marginal contribution fails to reveal these.

- Though for short-term assessment of profitability marginal costs may be useful, long term profit is correctly determined on full costs basis only.
- Although marginal costing eliminates the difficulties involved in the apportionment and under and over-absorption of fixed overhead, the problem still remains so far as the variable overhead is concerned.
- With increased automation and technological developments, the impact on fixed costs on products is much more than that of variable costs. A system which ignores fixed costs is therefore, less effective because a major portion of the cost, such as not taken care of.
- Marginal costing does not provide any standard for the evaluation of performance. A system of budgetary control and standard costing provides more effective control than that obtained by marginal costing.

b) Grate Ltd

(i) Marginal costing technique.

Solution

Basic workings

1. Marginal cost per unit

$$= 60 + 120 + 40$$

$$= \text{Sh. } 220$$

2. Full production cost per unit

Variable + fixed

= 220 + 80

= Sh. 300

3. Inventory

Period	Jan. 2023	Feb. 2023
	Units	Units
Opening inventory	0	4000
Production	30,000	30,000
	30,000	34,000
Less sales	26,000	34000
Closing inventory	4,000	0

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4. Over (Under) absorption of fixed production overheads

Period	Jan. 2023	Feb.2023
	Sh. ,000"	Sh. ,000"
Actual	2,400	2,400
Absorbed (30,000 × 80)	2,400	2,400
Over (under) absorption	0	0

Marginal costing Profit or loss statement

Month	January 2023		February 2023	
	Sh. ,000"	Sh. ,000"	Sh. ,000"	Sh. ,000"
Sales [26000(400); 34000(400)]		10,400		13,600
Less marginal production cost:				
Opening inventory [0(220); 4000(220)]	0		880	
Production [30,000 (220)]	6,600		6,600	
Closing inventory [4000(220); 0(220)]	(880)	(5,720)	(0)	(7,480)
Gross contribution		4,680		6,120
<u>Less other variable overheads</u>				
Selling overheads [26000(30); 34000(30)]		(780)		(1020)
Net contribution		3,900		5,100
Less total fixed costs				
Production overheads	2400		2400	
Selling overheads	1800	(4,200)	1800	(4,200)
Net profit (loss)		(300)		900

(ii) Absorption costing profit or loss statement.

Month	Jan 2023		Feb 2023	
	Sh. ,000"	Sh. ,000"	Sh. ,000"	Sh. ,000"
Sales		10400		13,600
<u>Less full production cost:</u>				
Opening inventory	0		1200	

[0(300); 4000(300)]				
Production [3000(300)]	9000		9000	
Closing inventory [4000(300); 0(300)]	<u>(1200)</u>	<u>(7800)</u>	<u>(0)</u>	<u>(10,200)</u>
Gross profit		2,600		3,400
<u>Less other costs:</u>				
Variable selling overheads	780		1020	
Fixed selling overheads	<u>1,800</u>	<u>(2,580)</u>	<u>1,800</u>	<u>(2,820)</u>
Net profit (loss)		<u>20</u>		<u>580</u>

QUESTION 4

December 2022 Question Two (b)

Lengo Ltd. manufactures and sells two products L and G to a number of customers. The company is currently preparing its budget for the year ending 31 December 2023.

The cost, selling prices and demand units details for its two products are as follows:

Product	L	G
	Sh.	Sh.
Selling price per unit	2,000	2,100
Variable costs per unit:		
Direct material Q (Sh.25 per litre)	200	250
Direct material T (Sh.40 per litre)	400	200
Direct labour (Sh.140 per hour)	280	350
Overhead (Sh.40 per hour)	160	200
Fixed production cost per unit	400	500
	Units	Units
Maximum sales demand for the month	1,000	3,000

Additional information:

1. The fixed production cost per unit is based upon an absorption rate of Sh.200 per direct labour hour and total annual production activity is 90,000 direct labour hours. One-twelfth (1/12) of the annual fixed production cost will be incurred.
2. In addition to the above costs, non-production overhead costs are expected to be Sh.577,500.
3. During the period, the availability of material Q is expected to be limited to 31,250 litres.
4. It is the policy of Lengo Ltd not to hold inventory of finished goods

Required:

- (i) Compute the shortfall in litres for material Q. (3 marks)
- (ii) The optimal production mix based on priority ranking. (7 marks)
- (iii) The net profit at optimal production mix. (4 marks)

ANSWER

(i) Computing the shortfall in litres for material Q

Product		Material Q
		Litres
L	$\frac{200}{25} \times 1000$	8 000
G	$\frac{250}{25} \times 3000$	<u>30 000</u>

Total requirements	38 000
Total availability	<u>31,250</u>
Shortfall	<u>6,750</u>

(ii) The optimal production mix based on priority ranking

Product	Variable cost per unit
	Sh.
L	200 + 400 + 280 + 160 1040
G	250 + 200 + 350 + 200 1000

Product	L	G
	Sh.	Sh
Selling price per unit	2000	2100
Less variable cost per unit	<u>1040</u>	<u>1000</u>
Contribution per unit	960	1100
Limiting factor requirement per unit (Material Q in litres)	8	10
Contribution per unit per litre	$\frac{960}{8} = 120$	$\frac{1100}{10} = 110$
Ranking	1	2

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Optimal production plan/mix

Rank	Product	Demand (units)	Resource used (Litres)	Resource balance (Litres)
1	L	1000	8000	23250
2	G $\left[\frac{23250}{30000} \times 3000 \right]$	2325	<u>23250</u>	0
			<u>31250</u>	

Hence, the company should produce 1000 units of L and 2325 units of G with the available material of 31250 litres of material Q, so as to maximize the profits.

(iii) The net profit at optimal production mix

Product	L	G	Total
	Sh.	Sh.	Sh.
Contribution	(1000 × 960) 960 000	(2325 × 1100) 2,557,500	3 517 500
Less: Total fixed costs. Production OHS (90 000 × 200 × $\frac{1}{12}$)			<u>1 500 000</u>
Non production OHS			<u>(577 500)</u>
Net profit (loss)			<u>1 440 000</u>

QUESTION 5

December 2022 Question Four (a)

Explain **FOUR** arguments in favour of marginal costing system. (8 marks)

ANSWER

- It is simple to operate
- No arbitrary apportionment of fixed cost to products or departments
- Where sales are constant, but production fluctuates, marginal costing shows a constant profit whereas absorption costing shows varying profits

- Under or over absorption of overheads is almost entirely avoided
- Fixed costs are incurred on a time basis e.g. salaries, rent, rates etc, and do not relate to activity. Therefore, it's logical to write them off in the period they are incurred and this is done using marginal costing
- Accounts prepared using marginal costing more nearly approach the actual cash flow position

QUESTION 6

April 2022 Question Four (a)

Distinguish between "marginal costing" and "absorption costing" techniques. (4 marks)

ANSWER

The marginal cost refers to the increase in production costs generated by the production of additional product units. It is also known as the marginal cost of production.

Calculating the marginal cost allows companies to see how volume output influences cost and hence, ultimately, profits.

In contrast to marginal costing, in absorption costing (sometimes known as total absorption costing or full costing) all production costs are absorbed into cost units, including a share of fixed production overhead. This means that in a situation where stock is carried forward to future periods, with absorption costing a certain amount of fixed production overhead would also be carried forward, and therefore the reported profit figure would be different from that obtained with marginal costing.

QUESTION 7

November 2020 Question Three B

A manufacturing firm produces three products namely; X, Y and Z.

The following information relates to the production of the three products:

Details:	Product		
	X	Y	Z
	Sh.	Sh.	Sh.
Unit selling price	250	460	320

Variable production cost per unit:

Raw materials	70	155	110
Labour	24	44	32
Overheads	56	98	75

Additional information:

1. The total fixed production cost for the three products amounted to Sh.400,000.
2. Labour hours are currently limited to 25,000 hours paid at an hourly rate of Sh.8 during the production period.
3. The maximum demand for product X, Y and Z are 2,000 units, 1,800 units and 3,000 units respectively.

Required:

- (i) The current shortfall in labour hours at maximum demand. (4 marks)
- (ii) The optimal product mix and the resultant profit. (12 marks)

ANSWER

Production of X, Y and Z

(i) Current shortfall in labour hours at maximum demand

Number of hours required to produce:

$$\text{Product X} = 24 \div 8 = 3 \text{ hours per unit}$$

$$\text{Y} = 44 \div 8 = 5.5 \text{ hours per unit}$$

$$\text{Z} = 32 \div 8 = 4 \text{ hours per unit}$$

Hours required at maximum demand

Product

$$\text{X} = 2,000 \times 3 = 6,000$$

$$\text{Y} = 1,800 \times 5.5 = 9,900$$

$$\text{Z} = 3,000 \times 4 = \underline{12,000}$$

$$\text{Total} \quad \underline{\underline{27,900}}$$

$$\text{Shortfall} = 27,900 - 25,000$$

$$= \mathbf{2,900 \text{ labour hours}}$$

(ii) The optimal product mix and the resultant profit

Product			
	X	Y	Z
Selling price	250	460	320
Less: variable costs			

Raw materials	(70)	(155)	(110)
Labour	(24)	(44)	(32)
Overheads	(56)	(98)	(75)
Contribution	100	163	103
Units of limiting factor	3	5.5	4
Contribution per unit of limiting factor	33.33	29.64	25.75
Rank	1	2	3

Optimal product mix

Available hours	25,000
Less: Hours product X ($2,000 \times 3$)	(6,000)
	19,000
Less: Hours product Y ($1,800 \times 5.5$)	9,900
	<u>8,100</u>
Less: Hours product Z ($\frac{8,100}{4} \times 4$)	<u>8,100</u>
	0

Profit statement

	X	Y	Z	Total
Contribution	$2,000 \times 100$ = 200,000	$1,800 \times 163$ = 293,400	$2,025 \times 103$ =	701,975
Less: Fixed overheads				<u>400,000</u>
Net profit				<u>301,975</u>

QUESTION 8

May 2019 Question Two B

Pendo Ltd. makes three types of metallic doors; security, house and office which are made from the same basic materials (steel bars and iron sheets).

The standard unit costs and selling prices of the three types of doors are as provided below:

	Security	Door type House	Office
	Sh.	Sh.	Sh.
Direct materials:			
Steel bars	3,500	1,960	4,200
Iron sheets	10,920	11,760	10,500
Direct labour:			
Machining	2,100	1,400	2,660
Spraying	980	560	840
Unit selling price	24,500	26,040	26,600

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Additional information:

- The sales for the month of December 2018 are as follows:

Door type	Units
Security	200
House	200
Office	160

- Owing to an industrial dispute, suppliers of the iron sheets have estimated that only 5,124 square metres of iron sheets are available for the period. The iron sheets cost Sh.1,000 per square metre.

Required:

Advise the management of Pendo Ltd. on the most profitable mix of the three types of doors. (12 marks)

ANSWER

Advising the Pendo Ltd. on the most profitable mix of the three types of doors

Pendo ltd income statement			
	Security	House	Office
Units selling price	24,500	26,040	26,600
Direct materials:			
Steel bars	(3,500)	(1,960)	(4,200)
Iron sheets	(10,920)	(11,760)	(10,500)
Direct labour:			
Machinery	(2,100)	(1,400)	(2,660)
Spraying	(980)	(560)	(840)
Contribution	7,000	10,360	8,400
Square metres	10.92	11.76	10.50
Contributions per square metre	641.03	880.95	800
Rank	3	1	2

Square metre per unit

$$Security = 10,920 \div 1000 = 10.92$$

$$House = 11 \times 760 \div 1000 = 11.76$$

$$Office = 10,500 \div 1000 = 10.50$$

Allocation of available 5124 Square metres

Door type	Square metres
House	$200 \times 11.76 = 2,352$
Office	$160 \times 10.50 = 1,680$
Security	$100 \times 10.92 = \underline{1,092}$
	<u>5,124</u>

Advice:

Pendo Ltd management should produce 200 units of house door type; 160 office units of house door type and 100 security door type.

QUESTION 9

May 2018 Question Five B

Highlight two advantages of marginal costing.

(4 marks)

ANSWER

Advantages of marginal costing

Marginal costing is accounting technique where in the marginal cost i.e variable cost is charged to units of cost, while the fixed cost for the period is completely written off against the contribution; merits of marginal costing include.

- Helpful in budgetary control: the classification of expenses is very helpful in budgeting and a flexible budget for various levels of activities
- Better results: when used with standard costing, it gives better results
- Marginal costing is simple to understand

- By not charging fixed effect of varying charges per unit is avoided.
- Practical cost control is greatly facilitated by avoiding arbitrary allocation of fixed overheads, effort can be concentrated on maintaining a uniform and consistent marginal cost. It is useful to various levels of management.
- It eliminates large balances left in overhead control accounts which indicate the difficulty of ascertaining an accurate overhead recovery rate.
- The effects of alternatives sales or production policies can be more readily available and assessed and decisions taken would yield the maximum return to business.
- It prevents the illogical carry forward of current year's fixed overhead. Helps in production planning. It shows the amount of profit at every level of output with the help of cost volume profit relationship. Here the breakeven chart is made use of
- Treatment of overheads over or under recovery of overheads due to the separation of fixed overheads from production cost.

TOPIC 8

COST-VOLUME PROFIT ANALYSIS (BREAK-EVEN ANALYSIS)

QUESTION 1

April 2024 Question Three C

Ufanisi Enterprises outsource one of its raw materials branded —Oxla externally. The annual sales demand for material “Oxla” is 30,000 units. The company is planning to switch its purchasing system to a just-in-time (JIT) purchasing system to improve efficiency.

The following information is provided:

	Current system	Proposed system
Purchase cost per unit (Sh.)	400	400
Ordering cost per order (Sh.)	80,000	28,000
Inventory holding cost	12%	-

Additional information:

1. Inventory holding cost per annum is given as a percentage of purchases cost per unit.
2. Under the proposed JIT system, the company does not hold any inventory whatsoever.
3. The re-order quantity under the proposed JIT system is 4,000 units per order.

Required:

Advise the management of Ufanisi Enterprises on whether or not to switch to the proposed system. (6 marks)

ANSWER

$$EOQ = \sqrt{\frac{2Dc_o}{c_h}}$$

$$D = 30,000 \text{ units}$$

$$c_o = \text{sh. } 80,000 \text{ per order}$$

$$c_h = 12\% \times 400 = \text{sh. } 48 \text{ per unit p. a}$$

$$EOQ = \sqrt{\frac{2 \times 30,000 \times 80,000}{48}}$$

$$= 10,000 \text{ units per order}$$

Details	Current System Sh.	Proposed system (JIT) Sh.
Ordering cost $\left[\frac{D}{Q} \times c_o \right]$	$\frac{30,000}{10,000} \times 80,000 = 240,000$	$\frac{30,000}{4000} \times 28,000 = 210,000$
Holding Cost $\left[\frac{Q}{2} \times c_h \right]$	$\frac{10,000}{2} \times 48 = \underline{240,000}$	<u>0</u>
Total relevant costs	<u>480,000</u>	<u>210,000</u>

Advice

The management of Ufanisi Enterprises should consider to switch to a Just-in-time (JIT) purchasing system to improve efficiency and hence save (480,000 – 210,000); sh. 270,000 annually whenever it orders the material “Oxla” externally

QUESTION 2

December 2023 Question One C

Jeffy Ltd. has been manufacturing and selling three textile products. The following details are available for each of the three products:

Product	Cotton	Linen	Polyester
	Sh. per unit	Sh. per unit	Sh. per unit
Direct material	350	365	255
Direct labour	480	240	210
Variable production overheads	150	115	205
Fixed production overheads	<u>300</u>	<u>300</u>	<u>300</u>
Total cost per unit	1,280	1,020	970
Selling price	<u>1,600</u>	<u>1,340</u>	<u>1,300</u>
Net profit	<u><u>320</u></u>	<u><u>320</u></u>	<u><u>330</u></u>
Budgeted annual demand (units)	1,600	2,400	3,000

Additional information:

- Each direct labour hour is charged at Sh.120 for cotton, Sh.120 for linen and Sh.70 for polyester.
- The direct labour force is threatening to go on strike for two weeks. This means that only 10,100 hours will be available for production rather than the expected 20,200 hours.

Required:

If the strike goes ahead as planned, advise the management of Jeffy Ltd. on the product(s) that should be produced if profits are to be maximised. (8 marks)

ANSWER

Advising the management of Jeffy Ltd. on the products that should produced if profits are to be maximized

Basic workings

Shortfall in labour hours

Product	Labour hours
Cotton $\frac{480}{120} \times 1600$	6400
Linen $\frac{240}{120} \times 2400$	4800
Polyester $\frac{210}{70} \times 3000$	<u>9000</u>
Total hours required	20200
Total hours available	<u>10100</u>
Shortfall	<u>10100</u>

Product	Cotton	Linen	Polyester
Selling price(sh.)	1600	1340	1300
Less variable costs (sh.)	(1280 - 300) <u>980</u>	(1020 - 300) <u>720</u>	(970 - 300) <u>670</u>
Contribution per unit (sh.)	620	620	630
Limiting factor	4	2	3
requirement (labour hours per unit)			

Contribution per unit per hour	$\frac{620}{4} = 155$	$\frac{620}{2} = 310$	$\frac{630}{3} = 210$
Rank	3	1	2

Optimal production mix

Rank	Product	Demand (units)	Resource used (hours)	Resource balance (hours)
1	Linen	2400	4800	5300
2	Polyester $\left[\frac{5300}{9000} \times 3000 \right]$	1767	5300	0
3	Cotton	0	0	0
			<u>10100</u>	
			Maximum hours	

Hence, the management of Jeffy Ltd. should consider to product 2400 units of linen, 1767 units of polyester and none for the cotton, with the available labour hours of 10100, so as to maximise profits.

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QUESTION 3

December 2023 Question Two

- (a) The Management Accountant of Almah Ltd. provided the following profit statement for the year ended 31 October 2023:

	Sh. "million"
Revenue	60
Total costs	(48)
Net profit	<u>12</u>

The contribution sales ratio is 50%.

Required:

- (i) Calculate the break-even sales. (2 marks)
- (ii) Calculate the margin of safety. (2 marks)

- (b) The management of Almah Ltd. in (a) above is considering two options with a view to increase sales in the year 2024.

These options are:

Option one: Increase sales by 30% and incur a sales promotion campaign worth Sh.5 million.

Option two: Increase sales by 20% and reduce the selling price by 10%.

Required:

Advise the management of Almah Ltd. on the better option to implement.

(4 marks)

- (c) Dimax College has been using their own van to transport students to and from college. The new principal feels this may be too expensive for the school. He suggests that the college could lease transport services from Gari Ltd. at a cost of Sh.308,000 per month.

The college accountant revealed the following information:

	Sh.
Cost of the van	7,000,000
Annual insurance	790,000
Annual repairs	440,000
Driver's monthly salary	90,000
Annual road licence	100,000
Transport levy per annum	154,000
Scrap value of the van	1,000,000
Tyres and tubes annual cost	126,000
Inspection cost per year	10,000
Petrol cost per kilometre	154

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Additional information:

1. The van is estimated to cover 40,000 km per year. It has an estimated useful life of six years.
2. A new traffic rule has been issued requiring all passenger vehicles including college vans to be fitted with speed governors and seat belts. This will cost Sh.40,000 per annum.
3. Gari Ltd.'s monthly cost of Sh.308,000 is attributed as follows:

	Sh.
Van hire	220,000
Driver's salary	50,000
Maintenance fee	<u>38,000</u>
	<u>308,000</u>

Required:

- (i) Compute the cost per kilometre if the college:
- Uses its own transport. (6 marks)
 - Hires transport services. (3 marks)
- (ii) Outline **THREE** other factors that the college might consider in choosing the best alternative. (3 marks)

ANSWER

(a) Almah Ltd.

(i) Calculate the break-even sales.

$$= \frac{\text{Total fixed costs (TFC)}}{\text{Contribution sales ratio (CSR)}}$$

Budgeted revenue = sh.60 million

$$\text{CSR} = 50\% = 0.5$$

$$\text{Total contribution} = 50\% \times 60$$

$$= \text{sh. } 30 \text{ m}$$

$$\text{Profit (loss)} = \text{Contribution} - \text{TFC}$$

$$\text{TFC} = \text{Contribution} - \text{profit (loss)}$$

$$= 30 - 12$$

$$= \text{sh. } 18 \text{ m}$$

$$\text{Break – even sales} = \frac{18}{0.5}$$

$$= \text{sh. } 36 \text{ m}$$

(ii) Calculate the margin of safety.

$$\text{MOS} = \text{Budgeted sales} - \text{Break even sales}$$

$$= 60 - 36$$

$$= \text{sh. } 24 \text{ million}$$

(b) Advising the management of Almah Ltd on the better option to implement

$$\text{Total variable costs} = \text{sales} - \text{contribution}$$

$$= 60 - 30$$

$$= \text{sh. } 30 \text{ m}$$

Option	Current	ONE	TWO
	Sh. M	Sh. M	Sh. M
Revenue	60	(130%×60) 78	(120%×90%×60) 64.8
Variable costs	<u>(30)</u>	(130%×30) <u>(39)</u>	(120%×30) <u>(36)</u>
Contribution	30	39	28.8
Relevant costs	<u>(0)</u>	<u>(5)</u>	<u>(0)</u>
	30	34	28.8
Total fixed costs	<u>(18)</u>	<u>(18)</u>	<u>(18)</u>

Net profit (loss)	<u>12</u>	<u>16</u>	<u>20.8</u>
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Hence, the better option to be implemented by the management of Almah Ltd. is option one resulting in the highest profit of Sh. 16 m.

(c) Dimax College

(i) Compute the cost per kilometre if the college:

- Uses its own transport.

Operating cost statement

	Sh.	Sh.
<u>Running charges:</u>		
Tyres and Tubes	126,000	
Petrol (154×40,000)	6,160,000	
Driver's salary (90,000× 12)	<u>1,080,000</u>	7,366,000
<u>Maintenance charges:</u>		
Repairs	440,000	
Speed governors and seat belts	<u>40,000</u>	480,000
<u>Standing charges</u>		
Depreciation $\frac{7,000,000-1,000,000}{6}$	1,000,000	
Annual insurance	790,000	
Annual road license	100,000	
Transport levy	154,000	
Inspection cost	<u>10,000</u>	<u>2,054,000</u>
Total cost		<u>9,900,000</u>

$$\text{Cost per km} = \frac{\text{sh.}9,900,000}{40,000}$$

$$= \text{sh. } 247.50$$

- Hires transport services.

$$\text{Annual cost} = 308000 \times 12$$

$$= \text{sh. } 3,696,000$$

$$\text{Cost per km} = \frac{\text{sh.}3,696,000}{40,000}$$

$$= \text{sh. } 92.40$$

(ii) **Other forms that the college might consider in choosing the best alternative**

Based on the above results, hiring transport services appears to be the better option for the college because it's cheaper than using its own vehicle for transport. However, the college should consider the following factors when choosing the better alternative for transport:

- The flexibility of the leasing terms and conditions
- The quality of transport services to be hired
- Whether the hiring transportation cost will remain same
- Compliance with traffic rules by the hired company in providing services

- Whether the leasing of the transport services will be for short term or long.

QUESTION 4

December 2023 Question Three C

Tamu Ltd. is a company located in the Eastern part of the country and manufactures juices. The company plans to establish a subsidiary in western part of the country to produce mineral water. Tamu Ltd. estimates that the subsidiary can produce 40,000,000 bottles of water in the next one year.

The cost analysis for the subsidiary yielded the following estimates:

	Sh.“000”	Percentage of total annual cost that is variable (%)
Material cost	1,936,000	100
Labour cost	900,000	70
Overhead cost	800,000	64
Administrative cost	300,000	30

Additional information:

1. The bottled water produced by the subsidiary will be sold by sales representatives who will receive a commission of 8% of the sales price.
2. The subsidiary will operate independently in terms of costs and revenue.

Required:

- (i) Compute the sales price per bottle to enable management realise an estimated 10% profits on sales proceeds in the subsidiary. (6 marks)
- (ii) Calculate the break-even point in value for the subsidiary on the assumption that the sales price is Sh.110 per bottle. (4 marks)

ANSWER

- (i) **Sales price per bottle to enable management realise an estimated 10% profits on sales proceeds in the subsidiary**

$$\text{Sales price} = \frac{\text{Total sales}}{\text{Number of bottles}}$$

$$\text{Let total sales} = x \text{ (sh.000)}$$

$$\text{Total sales} = \text{Total cost} + \text{total profit}$$

$$\text{Total cost} = 1936000 + 900,000 + 800,000 + 300,000 + 0.08x$$

$$= 3936000 + 0.8x$$

$$\text{Total profit} = 10\%(x)$$

$$= 0.1x$$

$$x = 3,936,000 + 0.08x + 0.1x$$

$$0.82x = 3,936,000$$

$$x = 4,800,000 \text{ (sh. 000)}$$

$$\text{Sales price} = \frac{\text{sh.4,800,000,000}}{40,000,000 \text{ bottles}}$$

$$= \text{sh. 120 per bottle.}$$

- (ii) **Break-even point in value for the subsidiary on the assumption that the sales price is Sh.110 per bottle.**

$$\text{Break - even point (BEP) in value} = \left(\frac{\text{Total fixed cost (TFC)}}{\text{Unit contribution}} \right) \times \text{sales price}$$

$$\begin{aligned} \text{Total fixed production cost} &= 0.3(900,000) + 0.36(800,000) \\ &= 558000 \text{ (sh.000)} \end{aligned}$$

$$\begin{aligned} \text{Variable production cost per unit} &= \frac{1936000 + 0.7(900000) + 0.64(800000)}{40000 \text{ (000)}} \\ &= \text{sh. } 76.95 \end{aligned}$$

$$\begin{aligned} \text{BEP (sh.)} &= \left(\frac{558000000}{110 - 76.95} \right) \times 110 \\ &= \text{sh. } 1857,186,082 \end{aligned}$$

QUESTION 5

August 2023 Question Three A

Urembo Lifestyles offers three different types of body grooming and fitness services. These are: salon, gym and barber shop using the same staff. Various estimates for the next year have been made as follows:

Service	Salon	Gym	Barber shop
	Sh. per client	Sh. per client	Sh. per client
Service fee	300	390	200
Variable material costs	140	180	100
Variable labour costs	60	100	50
Fixed overhead costs	90	120	40
Labour hours per client	2 hours	3 hours	1.5 hours

Additional information:

1. Total fixed cost for the next year is expected to be Sh.400,000.
2. The budgeted maximum demand of clients for the next year for the services is estimated as follows:

- Salon 3,000 clients
- Gym 1,000 clients
- Barber shop 1,500 clients

3. Urembo Lifestyles has a maximum of 9,900 labour hours available next year.

Required:

- (i) If the business were to offer salon services only, calculate the break-even number of clients. (3 marks)
- (ii) Prepare the limiting factor mix schedule to show the number of clients per service that maximises profitability. (6 marks)
- (iii) The maximum net profit achievable based on service mix determined in (a) (ii) above. (3 marks)

ANSWER

- (i) **Break-even number of clients.**

$$\begin{aligned}\text{Break-even point} &= \frac{\text{Total fixed costs}}{\text{contribution per unit}} \\ &= \frac{400,000}{[300 - (140 + 60)]}\end{aligned}$$

= 4,000 clients

- (ii) Limiting factor mix schedule to show the number of clients per service that maximises profitability.

	Salon (S)	Gym (G)	Barber shop (B)
	Sh.	Sh.	Sh.
Service	300	390	200
Less variable costs	<u>(140+160) 200</u>	<u>(180+100) 280</u>	<u>(100+50) 150</u>
Unit contribution	100	110	50
Labour hours@unit	2	3	1.5
Contribution @unit per hour	$\frac{100}{2} = 50$	$\frac{110}{3} = 37$	$\frac{50}{1.5} = 33$
Rank	1	2	3

Optimal production mix

Rank	Service	Demand (No. of clients)	Labour hours used	Balance (hours)
1	S	3000	6000	3900
2	G	1000	3000	900
3	B	$\left(\frac{900 \times 1500}{2250}\right) 600$	<u>900</u>	0

Max 9900 hours available

Hence, the optimal limiting factor mix schedule is to service 3000 clients, 1000 clients and 600 clients for salon, Gym and Barber shop respectively with the available hours of 9900 so as to maximize profit.

(iii) The maximum net profit achievable based on service mix determined in (a)

(ii) above.

Service	Salon sh.	Gym sh.	Barber shop sh.	Total sh.
Total contribution [100(3000); 110(1000); 50(600)]	300,000	110,000	30,000	440,000
Less total fixed costs				400,000
Net profit (loss)				40,000

QUESTION 6

April 2023 Question Five A

Quivo Ltd. manufactures and sells a single product branded “QV”. The following information relates to product “QV” for the month of March 2023:

	Sh. per unit
Materials	800
Conversion costs (variable)	600
Selling price	2,000

Additional information:

- The dealer’s margin is equivalent to 10% of the selling price.
- The total fixed cost during the period was Sh.25,000,000.

3. The sales department indicates that the current sales during the period amounted to 90,000 units.
4. The production capacity utilisation is at 60%.

The company has in the recent past faced an acute competition that has negatively affected the sales targets. The Marketing Manager has presented the following two options for increasing sales:

Option A: Reducing sales price by 5%.

Option B: Increasing dealers' margin by 25% over the existing rate.

Required:

Recommended the option the company should adopt if the company desires to maintain the present profit. (8 marks)

ANSWER

	Sh „000“
Sales (90,000 × 2,000)	180,000
Less marginal production (90,000 × 1400)	<u>126,000</u>
Contribution	54,000
Less total fixed cost	<u>25,000</u>
Profit (loss)	<u>29,000</u>

Option A

Sales ($90,000 \times 105\% \times 2000 \times 95\%$)	179,550
Less marginal production cost ($90000 \times 105\% \times 1400$)	<u>132,300</u>
Contribution	47,250
Less total fixed costs	<u>25,000</u>
Profit (loss)	<u>22,250</u>

Option B

Sales ($90,000 \times 125\% \times 2000 \times 75\%$)	168,750
Less marginal production cost ($90,000 \times 125\% \times 1400$)	<u>157,500</u>
Contribution	11,250
Less total fixed costs	<u>25,000</u>
Profit (loss)	<u>(13,750)</u>

Recommendation

The company should continue with current operating policy since it results in the highest profit of Sh. 29,000,000

QUESTION 7

December 2022 Question One (c)

Babu Ltd. places orders for one of the components used in its manufacturing process. The price of the component has been fluctuating thus affecting the production of the final product and hence eroding market confidence of the company's clients. The company's accountant has presented the following quantity ranges and respective price of the component which he believes would result in a cost saving to the company:

Range number	Quantity range	Prices per unit of the
	Units	component Sh.
I	1 - 6000	420
11	6,001 - 10,000	380
111	10,001 – 14,000	340
IV	14,001 – 18,000	310
V	18,001 and above	260

Additional information:

1. The company's annual demand is 60,000 units.
2. The ordering cost per order is Sh.50,000.
3. The holding cost is 20% of the purchase price
4. The company practices continuous stock taking throughout the year.

Required:

Advise the company on the quantity range that would yield the highest cost savings.

(10 marks)

ANSWER

Advising the company on the quantity range that would yield the highest cost savings.

$$EOQ = \sqrt{\frac{2DC_o}{C_h}}$$

$$= \sqrt{\frac{2 \times 60\,000 \times 50\,000}{0.2 \times 420}}$$

= 8452 units per order Approx.

Order size (unit per order)	Purchase cost Sh.	Ordering cost Sh.	Holding cost Sh.	Total cost Sh.
6000	(60,00 × 420) 25,200,000	$\left(\frac{60,000}{6,000} \times 50,000\right)$ 500,000	$\frac{6000}{2} \times 0.2 \times 420$ 252,000	25,952 000
8452	(60 000 × 420) 25 200 000	$\left(\frac{60\,000}{8452} \times 50\,000\right)$ 354 946	$\frac{8452}{2} \times 0.2 \times 420$ 354 984	25 909 930
10 000	(60 000 × 380) 22 800 000	$\left(\frac{60\,000}{10\,000} \times 50\,000\right)$ 300 000	$\frac{10\,000}{2} \times 0.2 \times 380$ 380 000	23 480 000
14 000	(60 000 × 340) 20 400 000	$\left(\frac{60\,000}{14\,000} \times 50\,000\right)$ 214 286	$\frac{14000}{2} \times 0.2 \times 340$ 476 000	21 090 286
18 000	(60 000 × 310) 18 600 000	$\left(\frac{60\,000}{18\,000} \times 50\,000\right)$ 166 667	$\frac{18000}{2} \times 0.2 \times 310$ 558 000	19 324 667
18 001 and above	(60 000 × 260) 15 600 000	$\left(\frac{60\,000}{18\,001} \times 50\,000\right)$ 166 657	$\frac{18001}{2} \times 0.2 \times 260$ 468 026	16,234 683

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The company should order in quantities of at least 18 001 units resulting in the highest cost savings since it has the lowest total cost of Sh.16 234 683.

QUESTION 8

August 2022 Question Three (a)

Discuss six benefits that would accrue to a firm that uses break-even charts in making managerial decisions in its operations. (6 marks)

ANSWER

- The **management can understand more information** from the break-even chart than Profit and Loss Account and Cost Statements.
- The relationship between cost, volume and profit of the company are simply presented in the break-even chart. It **summarizes maximum information in a graph**.
- The chart is highly **useful for taking valuable decisions** by the management. The reason is that break-even chart shows the effect on profits of changes in fixed costs, variable costs, selling price and volume of sales.
- The chart is very **useful for forecasting costs and profits** at various levels of production and sales.
- The management exercises the **cost control** because it shows the relative importance of the fixed costs and the variable cost.

- The chart **helps the management to find the profitability** of products and most profitable product mix.
- Profits at different levels of activity can also be ascertained.
- The chart **helps to fix the selling price**, which would give desired profit.
- The effect of increase or reduction of selling price is known in the chart.

QUESTION 9

April 2022 Question Two (b)

The following data relate to a particular stock item of Magala Ltd. The company's management is in the process of setting its stock levels as a way to address the escalating stock handling costs.

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The following information is provided:

Normal usage per day	1,100 units
Minimum usage per day	500 units
Maximum usage per day	1,400 units
Lead time	25 - 30 days
Economic order quantity (previously calculated)	50,000 units

Required:

Compute the following:

- (i) Re-order level. (2 marks)

- (ii) Maximum stock level. (4 marks)
- (iii) Minimum stock level. (4 marks)
- (iv) Average stock level. (2 marks)

ANSWER

(i) Re-order level.

$$\text{ROL} = \text{Max: C} \times \text{Max: RP}$$

$$= 1,400 \times 30$$

$$42,000 \text{ units}$$

(ii) Maximum stock level.

$$\text{Max: SL} = \text{ROL} + \text{EOQ} - (\text{Min: C} \times \text{Min: RP})$$

$$= 42,000 + 50,000 - (500 \times 25)$$

$$= 92,000 - 12,500$$

$$= 79,500 \text{ units}$$

(iii) Minimum stock level.

$$\text{Min: SL} = \text{ROL} - (\text{M: C} \times \text{N: RP})$$

$$= 42,000 - (11,000 \times 27.5)$$

$$= 42,000 - 30,250$$

$$= 11,750 \text{ units}$$

(iv) Average stock level

$$\begin{aligned}\text{ASL} &= (\text{Max: SL} + \text{Min: SL}) \div 2 \\ &= (79,400 + 11,750) \div 2 \\ &= 45,625 \text{ units}\end{aligned}$$

QUESTION 10

April 2022 Question Five (b)

Wasiri Ltd. produces 10,000 units per annum by employing 50% of the total factory capacity.

The selling price per unit is Sh.500 and the total costs are as follows:

	Sh."000"
Materials	1,000
Wages	2,000
Fixed overheads	1,000
Fixed Overheads	<u>400</u>
Total costs	<u>4,400</u>

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Additional information:

1. Variable overheads maintains a constant ratio to the number of units produced.
2. The production manager is evaluating acceptance of a special offer of additional 10,000 units at a selling price of Sh.387.50 each.
3. The increased volume of purchases will reduce the material price by 2.5%.

4. The wage rates will remain constant but due to employment of new workers, there will be a drop in labour efficiency by 5% on all production.

Required:

- (i) Prepare a statement showing the variation of net profits resulting from the acceptance of the order (6 marks)
- (ii) Advise the management of Wasiri Ltd. on whether to accept the offer. (2 marks)

ANSWER

(i)

Item	Amount	Units	Cost per unit
Material	1,000,000	10,000	100
Wages	2,000,000	10,000	200
Variable overheads	1,000,000	10,000	100
Fixed overheads	400,000	10,000	40

Assumption

First overheads termed as fixed overheads are variable overheads.

Consequence of offer acceptance

New material price per unit

New material price per unit

$$= \frac{97.5}{100} \times 100 = 97.50$$

Contribution for new order

	Sh.	Sh.
Sales		387.50
Less:		
Materials	97.50	
Wages	200.00	
Variable OHS	<u>100.00</u>	<u>(397.50)</u>
		(10.00)
Units order		10,000
Decrease contribution per unit		(10,000)

(ii) Advice

Should reject new offer because it will decrease profit made by Sh. 10,000

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QUESTION 11

December 2021 Question One (a)

Blade Ltd. manufactures a range of electronic products. The supplier of component X has informed Blade Ltd. that it will offer a quantity discount of 1% if Blade Ltd. places an order of 10,000 components or more at any time. Details of components X are as follows:

Cost per component before discount	Sh. 20
Annual purchases	150, 000 components
Ordering costs	Sh.360 per order
Holding costs	Sh.3 per component per annum

Required:

- (i) Economic order quantity (EOQ) (2 marks)
- (ii) Annual ordering cost and holding costs of inventory of component X using the economic order quantity (EOQ) computed in (a) (i) above. (4 marks)
- (iii) Advise the management of Blade Ltd. whether the discount should be accepted. (4 marks)

ANSWER

(i) Economic order quantity (EOQ)

$$Q = \sqrt{\frac{2DC_0}{C_h}}$$

Where:

D is demand in units = 150,000

C_0 is cost per order = 360

C_h is holding cost per unit = Sh. 3

$$\begin{aligned} Q &= \sqrt{\frac{2 \times 150,000 \times 360}{3}} \\ &= \sqrt{36,000,000} \\ &= 6,000 \text{ units} \end{aligned}$$

(ii) Annual ordering cost and holding costs of inventory of component X

TC for EOQ

$$\begin{aligned} &= \frac{D}{Q} C_0 + \frac{Q}{2} C_h + PC \\ &= \left(\frac{150,000}{6,000} \times 360 \right) + \left(\frac{6,000}{2} \times 3 \right) + (20 \times 150,000) \\ &= 9,000 + 9,000 + 3,000,000 \\ &\text{Sh. 3,018,000} \end{aligned}$$

(iii) Advise

TC for discount offer

$$\begin{aligned} \text{Purchase cost per unit} &= \frac{99}{100} \times 20 \\ &= \text{Sh. 19.80} \end{aligned}$$

$$\begin{aligned} \text{Carrying cost} &= \frac{99}{100} \times 3 \\ &= \text{Sh. 2.97} \end{aligned}$$

$$\begin{aligned} &\left(\frac{150,000}{10,000} \times 360 \right) + \left(\frac{10,000}{2} \times 2.97 \right) + (150,000 \times 19.8) \\ &= 5,400 + 14,850 + 2,970,000 \\ &= \text{Sh. 2,990,250} \end{aligned}$$

Advice

Should accept discount offer since it will lead to a reduction in total costs

QUESTION 12

December 2021 Question Three (b)

Summarise four assumptions of cost-volume profit (CVP) analysis. (4 marks)

ANSWER

- That Costs are either fixed or variable and all costs are clearly segregated into their fixed and variable elements. This cannot possibly be done accurately and the difficulties and complications involved in such segregation make the break-even point inaccurate.
- That the behavior of both costs and revenue is not entirely related to changes in volume.
- That costs and revenue patterns are linear over levels of output being considered. In practice, this is not always so and the linear relationship is true only within a short run relevant range.
- That fixed costs remain constant and variable costs vary in proportion to the volume. Fixed costs are constant only within a limited range and are liable to change at varying levels of activity and also over a long period, particularly when additional plants and equipment are introduced.
- That sales mix is constant or only one product is manufactured. A combined analysis taking all the products of the mix does not reflect the correct position regarding individual products.
- That production and sales figures are identical or the change in opening and closing stocks of the finished product is not significant.
- That the units of production on the various product range are identical. Otherwise, it is difficult to find a homogeneous factor to represent volume.

- That the activities and productivity of the concern remain unchanged during the period of study.
- As output is continuously varied within a limited range, the contribution margin remains relatively constant. This is possible mainly where the output is more or less homogeneous as in the case of process industries.

QUESTION 13

September 2021 Question Five B

Wetu Ltd. makes leather purses. It has drawn up the following budget for its next financial period:

Selling price per unit	Sh.11.60
Variable production cost per unit	Sh.3.40
Sales commission	5% of selling price
Fixed production costs	Sh.430,500
Fixed selling and administrative cost	Sh.198,150
Sales	90,000 units

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Required:

- (i) Margin of safety percentage. (5 marks)
- (ii) The marketing manager has indicated that an increase in the selling price to Sh.12.25 per unit would not affect the number of units sold provided that the sales commission is increased to 8% of the selling price.

Required:

Determine the new break-even point in units.

(3 marks)

ANSWER

Wetu Ltd.

(i) Margin of safety percentage.

Selling price per unit	Sh. 11.60
Less: variable production overheads per unit	(3.40)
Less: sales commission per unit	<u>(0.58)</u>
Contribution per unit	<u>7.62</u>

$$\text{Break even point} = \frac{\text{Total fixed cost}}{\text{Contribution per unit}}$$

$$\frac{628,650}{\text{Sh } 7.62} = 82,500 \text{ units}$$

$$\text{Margin of safety} = \frac{90,000 - 82,500}{90,000} \times 100$$

$$= 8.33\%$$

(ii) The new break-even point in units.

Selling price per unit	Sh. 12.25
Less: variable production overhead	(3.40)

Less: sales commission per unit	<u>(0.98)</u>
Contribution	<u>7.87</u>

$$\begin{aligned}\text{B.E.P} &= \frac{\text{Total fixed cost}}{\text{Contribution per unit}} \\ &= \frac{628,650}{7.87} \\ &= 79,879 \text{ units}\end{aligned}$$

QUESTION 14

November 2018 Question Two A and B

- (a) Explain four assumptions of break-even analysis. (8 marks)
- (b) Kuni Limited are distributors of two cooking gas cylinders; "Meko" and "13C".

"Meko" weighs 6 kgs while "13C" weighs 13 kgs.

The following information relates to the company's projection for the year ending 30 June 2019:

Product "Meko"	Sh."000"
Sales (43,800 units)	49,056
Fixed costs	(9,811.2)
Variable costs	(29,433.6)
Operating profit	9,811,2
Product "13C"	

Sales (71,175 units)	142,350
Fixed costs	(79,716)
Variable costs	(42,705)
Operating profit	19,929

Required

- (i) Determine the break-even point of "meko" and "13C" in both units and shillings. (6 marks)
- (ii) Given that customers refill "meko" three times for every two times they refill "13C", compute the composite unit contribution margin. (4 marks)
- (iii) Determine the break-even sales in shillings assuming that "meko" and "13C" are normally purchased in the ratio of one to one. (2 marks)

ANSWER

(a) Assumptions of breakeven analysis

- Fixed cost remains constant throughout the analysis
- The selling price per unit remains constant
- All units produced will sold
- Only one product is produced and sold. In case of multiple products the sales mix will be constant.
- Technology in production and efficiency level remains the same

- Output is the only cost and revenue driver
- Variable cost per unit remains the same
- Cost can be split into fixed costs and variable costs
- Revenues, cost and profit functions are assumed to be linear with respect to output level.

b) i) Break-even point of "meko" and "13C" in both units and shillings

$$\text{Selling price meko per unit} = \frac{49,056,000}{43,800} = \text{Sh}1,120$$

$$\begin{aligned}\text{Variable cost per unit meko} &= \frac{\text{Total variable cost}}{\text{Units sold}} \\ &= \frac{29,433,600}{43,800} = \text{Sh. } 672\end{aligned}$$

$$\begin{aligned}\text{Breakeven point in units make up} &= \frac{\text{Fixed costs}}{\text{Selling price per unit} - \text{variable cost per unit}} \\ &= \frac{9,811,200}{1,120 - 672} = 21,900 \text{ units}\end{aligned}$$

$$\text{Breakeven point in sales} = \frac{\text{Fixed cost} \times \text{selling price per unit}}{\text{selling price per unit} - \text{variable cost per unit}}$$

$$\begin{aligned}&= \frac{9,811,200 \times 1,120}{1,120 - 672} \\ &= \text{Sh. } 24,528,000\end{aligned}$$

$$\text{Selling price per unit product} = \frac{142,350,000}{71,175} = \text{Sh } 2000$$

Variable cost per unit of product 13 c

$$= \frac{42,705,000}{71,175} = \text{Sh. } 600$$

$$BEP(\text{units}) = \frac{\text{Fixed cost}}{\text{Selling price per unit} - \text{variable cost per unit}}$$

$$\frac{79,716,000}{2,000 - 600} = 56,940$$

$$BEP(\text{Shillings}) = BEP \text{ units} \times \text{selling price per unit}$$

$$= 56,940 \times 2000$$

$$= \text{Sh. } 113,880,000$$

ii) Composite contribution margin

$$\text{Weighted Average Contribution Margin (WACM)} = W_1 CM_1 + W_2 CM_2$$

$$\text{Where: } W_1 = \text{Weight of meko} = 3/5 = 0.6$$

$$CM_1 = \text{Contribution per unit of Meko} = 1,120 - 672 = \text{Sh. } 448$$

$$W_2 = \text{Weight of product 13c} = 2/5 = 0.4$$

$$CM_2 = \text{contribution per unit of product 13c} = 2,000 - 600 = 1,400$$

$$WACM = (0.6 \times 448) + (0.4 \times 1400)$$

$$= 268.8 + 560$$

$$= \text{Sh } 828.8$$

iii) Break-even sales in shillings assuming that "meko" and "13C" are normally purchased in the ratio of one to one

$$\text{Contribution Margin ratio} = \frac{\text{Contribution}}{\text{Selling price per unit}}$$

$$\text{Contribution margin ratio meko} = \frac{448}{1,120} = 0.4$$

$$\text{Contribution margin ratio 13c} = 1,400 \div 2,000 = 0.7$$

$$\text{Weighted contribution margin ratio (WCMR)} = W_1CMR_1 + W_2CMR_2$$

$$\text{Where: } W_1 = \text{Weight of meko} = 1/2 = 0.5$$

$$CMR_1 = \text{Contribution margin ratio meko} = 0.4$$

$$W_2 = \text{Weight of 13 c} = 1/2 = 0.5$$

$$CMR_2 = \text{Contribution margin ratio 13c} = 0.7$$

$$\therefore WCMR = (0.5 \times 0.4) + (0.5 \times 0.7)$$

$$= 0.2 + 0.35 = 0.55$$

$$BEP(\text{shillings}) = \frac{\text{Total fixed cost}}{\text{Weighted contribution} - \text{Contribution margin}}$$

$$\frac{9,811,200 + 79,716,000}{50.00}$$

$$= \text{Sh. } 162,776,727.30$$

QUESTION 15

November 2017 Question Two A

XYZ Ltd manufactures a product branded –Zed”. The company has a production capacity of 1,000 units of Zed per day.

The following information relates to one unit of the product:

	Sh.
Materials	120
Labour	40
Variable overheads	40
Fixed overheads	100
Selling price	400

Required:

- i. Calculate the Break-Even-point (BEP) of sales at the current selling price for 1,000 units. (3 marks)
- ii. The marketing manager intends to reduce the selling price by either 10% or 20% for the 1,000 units without affecting the total profit.

Advise the marketing manager on the required sales volumes under the two options.

(8 marks)

ANSWER

(i) Breakeven point of sales

Contribution = Selling Price – Materials – Labour – Variable cost

$$= 400 - 120 - 40 - 40 = sh. 200$$

$$\text{Contribution margin ratio} = \frac{\text{Contribution}}{\text{Selling price}}$$

$$= \frac{200}{400} = 0.50$$

$$\text{BEP sales} = \frac{\text{Fixed cost}}{\text{Contribution margin ratio}}$$

$$= \frac{100 \times 1,000}{0.5} = sh. 200,000$$

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(ii) Required sales volume if selling price is reduced by either 10% or 20% for 1000 units but current profit still retained.

	Sh.
Sales (1000×400)	400,000
Less: Materials 120×1000	(120,000)
Less: Labour 40×1000	(40,000)
Less: Variable overheads 40×1000	<u>(40,000)</u>

Contribution	200,000
Less: Fixed cost	<u>(100,000)</u>
Existing Profit	<u>100,000</u>

Option 1: Reduce selling price by 10%

$$\text{New selling price} = \frac{90}{100} \times 400 = \text{sh.}360$$

Total variable cost per unit = Materials + Labour + Variable overheads

$$= 120 + 40 + 40 = \text{sh.}200$$

$$\text{Contribution per unit} = \text{Sh.}360 - \text{sh.}200 = \text{sh.}160$$

$$\text{BEP units} = \frac{\text{Fixed costs} + \text{Existing profit}}{\text{Contribution per unit}}$$

$$= \frac{100,000 + 100,00}{160} = 1,250 \text{ units}$$

Option II: Reduce the selling price by 20%

$$\text{New selling price} = \frac{80}{100} \times 400 = \text{sh.}320$$

$$\text{Contribution per unit} = \text{Sh.}320 - \text{sh.}200 = \text{sh.}120$$

$$\text{BEP units} = \frac{\text{Fixed costs} + \text{Existing profit}}{\text{Contribution per unit}}$$

$$= \frac{100,000 + 100,00}{120} = 1,666.667 \text{ units}$$

= 1,667 units

QUESTION 16

November 2017 Question Four B

The following information was extracted from the financial statements of ABC Ltd and XYZ Ltd in respect of the year ended 31 December 2016:

Income statement extracts:

	ABC Ltd	XYZ Ltd.
	Sh.000	Sh. 000
Sales	497,000	371,000
Cost of sales	<u>(357840)</u>	<u>(296.800)</u>
Gross profit	139,160	74,200
Operating expenses	(70,460)	(44,520)
Interest	<u>(19,000)</u>	=
Net profit	<u>49.700</u>	<u>29.680</u>

Statement of financial position extracts:

	ABC Ltd.	XYZ Ltd.
	Sh.“000”	Sh.“000”
Non-current Assets	142,000	92,000
Current Assets:		
Inventory	100,000	87,000

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Accounts receivable	46,000	42,000
Cash at bank	40,000	44,000
Current liabilities	98,000	108,000
Long-term loans	33,000	-
Shareholder funds	197,000	157,000

Required:

Assuming a 365 day year, evaluate the performance of the two firms using the following financial performance measures:

- i. Profitability. (4 marks)
- ii. Liquidity. (4 marks)
- iii. Activity. (4 marks)
- iv. Gearing. (4 marks)

ANSWER

i) Profitability ratios

In relation to sales	ABC ltd	XYZ ltd
Gross profit margin $= \frac{\text{Gross profit}}{\text{Sales}} \times 100$	$\left[\frac{139,160}{497,000} \times 100 \right]$ $= 28\%$	$\left[\frac{74,200}{371,000} \times 100 \right]$ $= 20\%$
Net profit margin $= \frac{\text{Net profit}}{\text{Sales}} \times 100$	$\left[\frac{49,700}{497,000} \times 100 \right]$ $= 10\%$	$\left[\frac{29,680}{371,000} \times 100 \right]$ $= 8\%$

Operating profit margin $= \frac{G.P - Operating\ expenses}{Sales} \times 100$	$\left[\frac{139,160 - 70,460}{497,000} \times 100 \right]$ $= 10\%$	$\left[\frac{29,680}{371,000} \times 100 \right] = 8\%$

Conclusion: Firm ABC LTD is more profitable than firm xyz ltd.

ii) Liquidity ratios

	ABC ltd	XYZ ltd
Current Ratio $= \frac{Current\ assets}{Current\ liabilities}$	$\left[\frac{186,000}{98,000} \right] = 1.90:1$	$\left[\frac{173,000}{108,000} \right] = 1.60:1$
Acid test/Quick ratio $= \frac{Current\ assets - Stock}{Current\ liabilities}$	$\left[\frac{186,000 - 100,000}{98,000} \right]$ $= 0.88:1$	$\left[\frac{173,000 - 87,000}{108,000} \right]$ $= 0.80:1$

Conclusion: firm ABC Ltd is in a better position to meet its short term obligations as compared to XYZ ltd.

i) Activity ratios

	ABC ltd	XYZ ltd
Inventory holding period $= \frac{\text{Average inventory}}{\text{Cost of sales}} \times 365$	$\left[\frac{100,000}{357,840} \right] \times 365$ $= 102 \text{ days}$	$\left[\frac{87,000}{296,800} \right] \times 365$ $= 106.99 \text{ days}$
Fixed asset turnover $= \frac{\text{Total sales}}{\text{Fixed Assets}}$	$\left[\frac{497,000}{142,000} \right]$ $= 3.5 \text{ times}$	$\left[\frac{371,000}{92,000} \right]$ $= 4.03 \text{ days}$
Total asset turnover $= \frac{\text{Total sales}}{\text{Fixed Assets}}$	$\left[\frac{497,000}{328,000} \right]$ $= 1.52 \text{ times}$	$\left[\frac{371,000}{265,000} \right]$ $= 1.40 \text{ days}$

Conclusion: ABC Limited is relatively more efficient as compared to XYZ Ltd

iv) Gearing ratios

	ABC ltd	XYZ ltd
Debt ratio $= \frac{\text{Total liabilities}}{\text{Total assets}}$	$\left[\frac{980,000 + 33,000}{328,000} \times 100 \right]$ $= 39.94\%$	$\left[\frac{108,000}{265,000} \times 100 \right]$ $= 40.75\%$
Equity ratio $= \frac{\text{Equity}}{\text{Capital employed}} \times 100$	$\left[\frac{197,000}{197,000 + 33,000} \times 100 \right]$ $= 85.65\%$	$\left[\frac{157,000}{157,000} \times 100 \right]$ $= 100\%$

Interest Coverage $= \frac{\text{Operating profit}}{\text{Interest paid}}$	$\left[\frac{139,160 - 70,460}{19,000} \right]$ $= 3.62$	$\left[\frac{74,200 - 44,520}{0} \right]$ $= \infty$
--	--	--

Conclusion: As indicated by debt ratio and equity ratio, firm XYZ Ltd is more levered as compared to ABC Ltd.

QUESTION 17

May 2017 Question Four B

Blacky Ltd. Manufactures three products namely; A, B and C. The management is reviewing the profitability of the product line.

You are given the following budgeted data relating to the company for the coming year:

Product	A	B	C
Sales (units)	<u>100,000</u>	<u>120,000</u>	<u>80,000</u>
	Sh. "000"	Sh. "000"	Sh. "000"
Revenue	<u>1500</u>	<u>1440</u>	<u>880</u>
Costs:			
Material	500	480	240
Labour	400	320	160
Overhead	<u>650</u>	<u>600</u>	<u>360</u>
Total cost	<u>1550</u>	<u>1400</u>	<u>760</u>
Profit or (loss)	<u>(50)</u>	<u>40</u>	<u>120</u>

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The management is concerned about the loss on Product A and it is considering ceasing its production and switching the spare capacity of 100,000 units to Product C.

Additional information:

1. All units produced are sold.
2. 25% of the labour cost for each product is fixed in nature,
3. Fixed administration overheads of Sh.900,000 in total have been apportioned to each product on the basis of units sold and are included in the overheads above. All other overhead costs are variable in nature.
4. Ceasing production of Product A would eliminate the fixed labour charge associated with it and one sixth ($\frac{1}{6}$) of the fixed administration overheads apportioned to Product A.
5. Increasing the production of Product C by 100,000 units would mean that the fixed labour cost associated with Product C would double, variable labour cost would rise by 20% and its selling price would decrease by Sh.1.50 in order to achieve the increased sales.

Required:

Advise the management of Blacky Ltd. on whether production of Product A should cease.

(14 marks)

ANSWER

Advice the management of Blacky Ltd. On whether production of Product A should cease

Fixed administration overheads originally

$$= \frac{80,000}{300,00} \times 900,000 = 240,000$$

Workings

Product	A	B	C
	Sh."000"	sh."000"	sh."000"
Labour cost			
Fixed 25%	100	80	40
Variable 75%	300	240	120
Total	400	320	160

Administration overhead

100: 120: 80 300 360 240

Overheads

Fixed	300	360	240
Variable	<u>350</u>	<u>240</u>	<u>120</u>
Total	<u><u>650</u></u>	<u><u>600</u></u>	<u><u>360</u></u>

Effect of ceasing production of product A on product C

$$\begin{aligned} \text{Current selling price per unit} &= \frac{\text{sh. } 880,000}{80,000 \text{ units}} \\ &= \text{sh. } 11 \text{ per unit} \end{aligned}$$

New selling price = 11 - 1.5 = sh 9.5 per unit

New revenue = (80,000 + 100,000) × 9.5 = sh. 1,710,000

New fixed labour cost (sh''000'') = $40 \times 2 = 80$

New variable labour cost (sh'000') = $120\%(120) = 144$

Product	A	B	C
	Sh ''000''	Sh.000	Sh. 000
Revenue	1,500	1,440	1,710
Less: variable costs:			
Material	(500)	(480)	(240)
Labour	(300)	(240)	(144)
Overhead	<u>(350)</u>	<u>(240)</u>	<u>(120)</u>
Contribution	350	480	1206
Lost contribution	(350)	(480)	(1206)
<i>Add:</i> directly attributable			
Fixed cost saved			
Labour cost	100	80	80
Administrative cost $\frac{1}{6}$	<u>50</u>	<u>60</u>	<u>40</u>
Increase (decrease) in Profit/ cash flows	<u>(200)</u>	<u>(340)</u>	<u>(1,086)</u>

Advice

The management of the company should not cease the production of product A because it would result in further losses of sh. 200,000.

QUESTION 18

November 2016 Question Two B

Exam-Companion Academy (ECA) offers expert training to candidates on four

	Subject area			
	Accounting	Taxation	Auditing	Economics
Expected training hours	2,500	3,000	3,500	1,000
Charge per hour (Sh.)	400	500	450	350
Variable cost per hour (Sh.)	100	150	90	100

The fixed costs for the year are expected to be sh. 1, 986,000.

Required:

- i. Assuming the above mix of training hours, advise the management on total number of hours required to break-even. (5 marks)
- ii. The contribution from each subject and in total at break-even. (4 marks)
- iii. Total hours required to earn a profit of Sh. 1, 324,000. (3 marks)

ANSWER

i) Training hours required to break even.

Subject	Accounting	Taxation	Auditing	Economics
Expected hours (mix)	2,500	3,000	3,500	1,000
Charge per hour (Sh.)	400	500	450	350
Variable cost per hour (Sh.)	100	150	90	100
Contribution margins (Sh.)	300	350	360	250

$$\text{Breakeven point in hours} = \frac{\text{Total fixed cost}}{\text{weighted average contribution per hour}}$$

But weighted average hourly contribution

$$\begin{aligned} &= \left(\frac{2500 \times 3}{2500 + 300} \right) + (350 \times 3000) + (360 \times 3500) + (250 \times 1000) \div 2500 + 3000 + 3500 + 1000 \\ &= \frac{750,000}{10,000} + 1,050,000 + 1,260,000 + 250,000 \\ &= 3,310,000 \div 10,000 = \text{Sh. } 331 \text{ per hour} \end{aligned}$$

$$\text{BEP} = \frac{1,986,000}{331} = 6,000 \text{ hours}$$

ii) Contribution from each subject and in total break even

Hours at BEP shared between the products as follows:

$$\text{Accounting} = \frac{2,500}{10,000} \times 6,000 = 1,500 \text{ hours}$$

$$\text{Taxation} = \frac{3,000}{10,000} \times 6,000 = 1,800 \text{ hours}$$

$$\text{Auditing} = \frac{3,500}{10,000} \times 6,000 = 2,100 \text{ hours}$$

$$\text{Economics} = \frac{1,000}{10,000} \times 6,000 = 600 \text{ hours}$$

Contribution statement at BEP:

Subject	Hours	Contribution / Hour	Total
Accounting	1,500	300	450,000
Taxation	1,800	350	630,000
Auditing	2,100	360	756,000
Economics	600	250	<u>150,000</u>
			<u>1,986,000</u>

(iii) Hours required generating a target profit of Sh. 1,324,000

$$= \frac{\text{Fixed Cost} + \text{Target profit}}{\text{Average Contribution}} = \left[\frac{1,986,000 + 1,324,000}{331} \right] = 10,000 \text{ hours}$$

QUESTION 19

November 2016 Question Three C

Labour Ltd manufactures a range of products. The company absorbs production overheads using a rate of 200% of the direct wages. This rate was calculated from

	Sh. "000"
Variable production cost	6,400
Fixed production costs	9,600
Direct labour costs	8,000

The management is faced with the following decision making problems:

Problem 1

The normal selling price per unit of product EXEM is Sh.220 while the unit production cost is as follows:

	Sh.
Raw materials	80
Direct labour	40
Production overheads	<u>80</u>
	<u>200</u>

There is a possibility of supplying a special order for 2,000 units of product EXEM at Sh.160 each. If the order is accepted, the normal budgeted sales would not be affected and the company has the necessary capacity to produce the additional units.

Problem 2

The cost of making component BEE, which forms part of product WYE is given below:

	Sh.
Raw materials	40
Direct labour	80
Production overheads	<u>160</u>
	<u>280</u>

Component BEE could be bought from an outside supplier for Sh.200.

Fixed production costs will not be affected.

Required:

- i. Advise the management on whether to accept the special order under problem 1.

(6 marks)

- ii. Evaluate whether the company should continue to make component BEE or buy it from an outside supplier under problem 2.

(6 marks)

ANSWER

(i) Whether to accept the special order

Production overhead absorption rates

$$\text{Variable production overhead} = \frac{6,400}{8,000} \times 100 = 80\%$$

$$\begin{aligned} \text{Fixed production overhead} &= \frac{9,600}{8,000} \times 100 = 120\% \\ &= 200\% \end{aligned}$$

Profit statement of the special order:

	Sh.	Sh.
Sales (2,000x160)		320,000
Less: Variable cost		
Raw materials (2,000x80)	160,000	
Direct labour (2,000x40)	80,000	
Variable overheads (80%x80,000)	<u>64,000</u>	<u>(304,000)</u>

Contribution		<u>16.000</u>
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Note: Fixed costs will be incurred whether we accept or reject above orders, so they are irrelevant in above decision thus ignored. Therefore, we should accept above order since it results to an increase in contribution by sh. 16,000.

(ii) Evaluation of make or buy decision:

Cost of making component BEE

	Sh.
Raw material	40
Direct labour	80
Variable production overhead (80%×80)	64
Variable production cost	184

Note

Fixed costs won't be affected as a result of the above decision so irrelevant to the decision above.

Cost of buying component BEE is sh 200. Therefore, since the variables production is low as compared to cost of buying the component, then best option is to make component BEE.

QUESTION 20

May 2016 Question One

(a) The following information has been made available from the records of Keni

Automotives Ltd. a company dealing with the manufacture of spare parts:

Direct materials Price per unit

Sh.

X 800

Y 600

Direct wages

X 12 hours at -Sh.50 per hour

Y 8 hours at Sh.45 per hour

Variable overheads 150% of direct wages

Fixed overheads Sh.750,000

Selling price	Sh.
X	2,500
Y	2,000

The directors of the company have sought your advice on the following alternative sales mix in the budget for the next period:.

- I. 2,500 units of X and 2.500 units of Y.
- II. 4,000 units of Y only.
- III. 4,000 units of X and 1.000 units of Y.
- IV. 1,500 units of X and 4,000 units of Y.

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Required

Advise the management of the company on which of the alternative sales mix you would recommend. Justify your answer. (12 marks)

- b) A company intends to start selling a new pair of hand held pliers in the upcoming financial year. The company wishes to establish how many hand held pliers should be sold in order to break even on this investment. The chief accountant has provided the following data:

Fixed costs	Sh.
Metal molding machine	1,000,000
Plastic grip molder	250,000
Sander	50,000
Variable cost (per unit)	Sh.
Packaging material	400
Raw materials	700
Grip metal	200
Shipping	75

Additional information:

1. The marketing department estimates that they could sell the new pair of hand held pliers for Sh.500 per unit and that projects' sales will average 16,000 units per month.
2. The company wishes to break even and start to earn profit within the first month.
3. The target profit level at the end of the first month is Sh.250,000.

Required:

- (i) The number of units required to Break even. (2 marks)
- (ii) Based on the projected monthly sales, calculate the margin of safety. Comment on your answer. (3 marks)
- (iii) The number of units required to earn the target profit at the end of the first month. (3 marks)

ANSWER

a) Option 1

	X Sh (000)	Y Sh (000)	Total
Sales Direct materials	$2,500 \times 2,500 = 6,250$	$2,500 \times 2,000 = 5,000$	11,250
X	$2,500 \times 800 = (2,000)$	$2,500 \times 600 = (2,500)$	(3,500)
Direct wages	$12 \times 50 = (1,500)$	$8 \times 45 \times 2,500 = (900)$	(2,400)
Variable overheads Contribution	$\frac{150}{100} \times 2,500 = (1,500)$	$\frac{150}{100} \times 900 = (1,350)$	(3,600)
Less: fixed cost	500	1,250	<u>1,750</u>
Profit			<u>(750)</u>

Option 2

	Sh (000)
Sales ($4,000 \times 2,000$)	8,000
Less: direct materials ($4,000 \times 600$)	(2,400)
Less: direct wages ($8 \times 45 \times 4000$)	(1,440)
Less variable overheads $\frac{150}{100} \times 1,440,000$	<u>(2,160)</u>
Contribution	2,000

Less: Fixed overheads	<u>(750)</u>
Profit	<u>1,250</u>

Option 3

	X sh. "000"	Y sh "000"	Total sh. "000"
Sales	$4000 \times 2500 = 10000$	$2000 \times 1000 = 2000$	12000
Less: Direct materials	$4000 \times 800 = 3200$	$1000 \times 600 = 600$	3800
Less: Direct labour	$4000 \times 600 = 2400$	$1000 \times 360 = 360$	2760
Less: Variables overhead	$\frac{150}{100} \times 2400 = 3600$	$\frac{150}{100} \times 360 = 540$	4140
Contribution	800	500	1300
Less: fixed costs			<u>(750)</u>
Profit			<u>550</u>

Option IV

	X sh. "000"	Y sh "000"	Total sh. "000"
Sales	$1500 \times 2500 = 3700$	$4000 \times 2000 = 8000$	11750
Less: direct materials	$1500 \times 800 = 1200$	$4000 \times 600 = 2400$	3600
Less: direct labour	$1500 \times 600 = 900$	$4000 \times 360 = 1440$	2340
Less: variables overhead	$\frac{150}{100} \times 900 = 1350$	$\frac{150}{100} \times 1440 = 2160$	3510
Contribution	300	2000	2300
Less: Fixed costs			<u>(750)</u>
Profit			<u>1550</u>

Recommendation:

Management of Keni automotives Ltd should adopt option Iv as it will give them the highest profit.

b)i) Number of Units required to break even

$$\text{Total fixed costs} = 1000\,000 + 250\,000 + 50\,000 = \text{sh. } 1\,300\,000$$

$$\begin{aligned}\text{Contribution per unit} &= \text{selling price per unit} - \text{variable cost per unit} \\ &= 1500 - 1375 \\ &= \text{Sh. } 125 \text{ per unit}\end{aligned}$$

$$\text{BEP(units)} = \frac{\text{Fixed costs}}{\text{Contribution per unit}}$$

$$\frac{1\,300\,000}{125} = 10,400 \text{ units}$$

ii) Margin of safety

$$\begin{aligned}\text{MOS} &= \text{Actual sales} - (\text{BEP units} \times \text{selling price}) \\ &= (16000 \times 1500) - (10400 \times 1500) \\ &= 24\,000\,000 - 15\,600\,000 \\ &= \text{Sh. } 8,400,000\end{aligned}$$

iii) The number of units required to earn the target profit at the end of the first month

$$\begin{aligned}
 BEP \text{ units} &= \frac{\text{Fixed cost} + \text{Target Profit}}{\text{Contribution per unit}} \\
 &= \frac{1\,300\,000 + 250\,000}{125} \\
 &= 12400 \text{ units}
 \end{aligned}$$

QUESTION 21

November 2015 Question Two B

Tarvol Ltd manufactures and sells a single product. The company's contribution format income statement for the year ended 31 October 2015 is given below:

	Total Sh.	Per unit Sh.	Percentage of sales
Sales (20,000 units)	1,200,000	60	100%
Variable expenses	<u>900,000</u>	<u>45</u>	<u>?</u>
Contribution margin	300,000	<u>15</u>	<u>?</u>
Fixed expenses	<u>(240,000)</u>		
Net income	<u>60,000</u>		

The management of the company is anxious to increase the company's profit and has asked for analysis of a number of items.

Required:

- i) Compute the company's contribution margin ratio and variable expense ratio.

(4 marks)

- ii) Compute the company's break-even point both in units and in shillings. (4 marks)
- iii) Compute the increase in net operating income of the company assuming that sales will increase by sh.400, 000 in the next financial year and the cost behavior patterns will remain unchanged. Use the contribution margin ratio obtained in (b) (i) above to compute your answer. (2 marks)
- iv) Refer to the original data. Assume that in the next financial year, the management targets the company to earn a profit of at least Sh.90, 000. Compute how many units would have to be sold to meet this target profit. (2 marks)

ANSWER

i) Company's Contribution margin ratio and Variable expense ratio

$$\text{Contribution margin ratio} = \frac{\text{Contribution}}{\text{Sales}} \times 100\%$$

$$= \frac{300\,000}{1\,200\,000} \times 100\%$$

$$= 25\%$$

$$\text{Variable expense ratio} = \frac{\text{Variable expense}}{\text{Sales}} \times 100\%$$

$$= \frac{900,000}{1,200,000} \times 100\% = 75\%$$

ii). Company's Breakeven point (BEP) in sales and units

$$\begin{aligned} \text{BEP in units} &= \frac{\text{Fixed expenses}}{\text{Selling price per unit} - \text{variable cost per unit}} \\ &= \frac{240,000}{60 - 45} \\ &= 16,000 \text{ units} \end{aligned}$$

$$\begin{aligned} \text{BEP in sales} &= \text{BEP units} \times \text{selling price per unit} \\ &= 16,000 \times 60 \\ &= \text{sh. } 960,000 \end{aligned}$$

iii) Increase in net operating income of the company assuming that sales increases by 400,000 in the next financial year and the cost behavior patterns will remain unchanged.

$$\begin{aligned} \text{Increase in net income} &= \frac{25}{100} \times 400,000 \\ &= \text{sh. } 100,000 \end{aligned}$$

iv) Units that would have to be sold to meet target profit

$$\begin{aligned} \text{BEP units} &= \frac{\text{Target profit} + \text{Fixed costs}}{\text{Contribution per unit}} \\ &= \frac{90,000 + 240,000}{15} \\ &= 22,000 \text{ units} \end{aligned}$$

QUESTION 22

November 2015 Question Five

Highlight six assumptions of cost volume profit (CVP) analysis (6 marks)

Computech has two fully automated machines M1 and M2 through which metal is passed to produce stands. There are production constraints and Computech has decided to produce only one of the three stand models P, Q and R during the next financial year.

The forecasts for the next financial year are as follows:

	P	Q	R
Maximum sales (units)	7,400	10,000	12,000
Stand unit data			
Selling price (Sh.)	900	800	1,000
Machine time: M1 (hours)	0.25	0.15	0.3
M2 (hours)	0.2	0.225	0.25

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Additional information:

- Maximum operating hours for machine M1 is 1,700 hours while for machine M2 is 1,920.
- Maximum quantity of metal available amounts to 17,000 metres.
- Each stand requires 2 metres of metal
- The cost of metal amounts to Sh.50 per metre.
- Variable machine overheads for machine M1 and machine M2 are Sh.500 per hour and Sh.600 per hour respectively.

6. Production capacity is dedicated to the stands only.

Required:

Advise the management of Computech on which stand to produce and sell indicating the number of units and resulting contribution. (14 marks)

ANSWER

Assumptions of CVP analysis

- Constant selling price per unit
- Constant variable cost per unit
- Constant total fixed cost
- Units sold equal to units produced
- Linear relationship within a relevant range
- Costs are classified into variable or fixed costs
- Firm produces a single homogenous product and if multiple, sales mix is known
- The method of production and level of technology is not expected to change

b) Maximum production based on limiting factors

Limitation:	P	Q	R
Machine M1	$\frac{1,700}{0.25} = 6,800$	$\frac{1,700}{0.15} = 11,333$	$\frac{1,920}{0.3} = 5,667$
Machine M2	$\frac{1,920}{0.2} = 9,600$	$\frac{1,920}{0.225} = 8,533$	$\frac{1,920}{0.25} = 7,680$

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Metal (Metres)	$\frac{1,700}{2} = 8,500$	8,500	8,500
Max production	6,800	8,500	5,667

Unit production

	P		Q		R	
	Sh.000	Sh.000	Sh.000	Sh.000	Sh.000	Sh.000
Selling price		900		800		1,000
Less: Variable cost:						
Machine M1	500×0.25 = 125		500×0.15 = 75		500×0.3 = 150	
Machine M2	600×0.2 = 120		600×0.225 = 135		600×0.25 = 150	
Metal	2×50 = <u>100</u>	(345)	2×50 = <u>100</u>	(310)	2×50 = <u>100</u>	400
Contribution per unit		555		490		600
Maximum Production		<u>6,800</u>		<u>8,500</u>		<u>5,667</u>
Total contribution		<u>3,774</u>		<u>4,165</u>		<u>3,400.2</u>

Total Contribution: P=3,774,000, Q=4,165,000 and R=3,400,200

Conclusion:

Since we can only produce one stand, then the company should produce stand Q because it has the highest total contribution.

QUESTION 23

Pilot paper 2015 Question Five

Omega Manufacturers Limited has just acquired new production facilities to produce product Omega. The product will be produced in two departments, crushing and filtering.

Additional information:

1. The product will retail at a price of Sh.500 per litre.
2. Variable production costs are as follows:

	Crushing	Filtering
Direct materials	sh. 50	-
Direct labour	sh.150	sh.40
Variable production overheads	sh. 40	sh.20

3. Fixed production overheads amount to Sh.5,000,000 for both departments.
4. The Crushing department is currently operating at full capacity with available labour hours being 10,000.
5. Each unit of Omega requires 0.25 hours in the Crushing department.

Required:

- (a) (i) Break-even point in units and revenue. (4 marks)
- (ii) Margin of safety in units. (2 marks)
- (iii) Current budgeted profit. (2 marks)
- (b) A customer has offered to purchase 2000 units of product Alpha, another product that Omega Manufacturers Limited can produce with the new production facility:

Cost data is as follows for product Alpha:

(i) Cost per unit

	Crushing	Filtering
Direct materials	Sh. 250	-
Direct labour	Sh. 300	Sh.80
Variable production overheads	Sh. 50	Sh.20

(ii) Each unit of Alpha requires 0.5 hours in crushing department.

(iii) The customer has offered a price of Sh.1500 per unit of Alpha.

(iv) Incremental fixed costs associated with the offer amount to Sh.1,000,000.

Required:

Advise the company on whether to accept the offer. (6 marks)

(c) The management is considering a proposal to establish a new market in a neighbouring country for product Omega. This will require expansion of the production facility.

The proposal will increase costs as follows:

Advertising expenses 10% of revenue.

Travelling expenses 10% of prime cost.

Fixed production overheads Sh.2,500,000

Target annual sales volume will be 10,000 units in the new market at a price of Sh.900 per unit.

Required:

Advise the company on whether it should market product Omega in the new country.

(6 marks)

ANSWER

(a)

i) Break-even point in units and revenue

$$\text{Break – even Point in units} = \frac{\text{Fixed cost}}{\text{Contribution margin}}$$

$$\text{Contribution margin (CM)} = \text{Selling Price per unit (SP)} - \text{Variable cost per unit (VC)}$$

Total Variable cost per unit

	Crushing	Filtering	Total
Direct materials	50	-	50
Direct labour	150	40	190
Variable production overhead	40	20	<u>60</u>
			<u>300</u>

$$\text{BEP in units} = \frac{5,000,000}{500 - 300} = 25,000 \text{ units}$$

$$\text{BEP in revenue} = \frac{\text{Fixed cost}}{\text{Contribution Margin ratio}}$$

$$\text{Contribution margin ratio} = \frac{\text{Selling Price per unit} - \text{Variable cost per unit}}{\text{Selling price per unit}}$$

$$= \frac{500 - 300}{500} = 0.4$$

$$BEP \text{ in revenue} = \frac{5,000,000}{0.4} = sh. 12,500,000$$

ii) Margin of safety in units

$$\text{Margin of safety in units} = \text{Actual sales in units} - \text{Breakeven number of units}$$

Actual sales in units:

$$1 \text{ unit} = 0.25 \text{ hours}$$

$$? = 10,000 \text{ hours}$$

$$\frac{10,000 \times 1}{0.25} = 40,000 \text{ units}$$

$$\text{Margin of safety in units} = 40,000 - 25,000$$

$$= 15,000 \text{ units}$$

iii) Current budgeted profit

$$\pi = (CM)x - F$$

$$\text{Profit} = \text{Contribution Margin} \times \text{Sales in units} - \text{Fixed cost}$$

$$\pi = (500 - 300)40,000 - 5,000,000$$

$$= sh. 3,000,000$$

b) Advising the company regarding the offer

	Crushing	Filtering	Total
	Sh.	Sh.	Sh.
Direct materials	250	-	250
Direct labour	300	80	380
Variable production overhead	50	20	70
Incremental fixed cost $1,000,000 \div 2,000$			<u>500</u>
Total cost of production			<u>1200</u>
Offer price			1500

Advice: Accept the special offer of sh.1500 as it's higher than the total cost of production of 1200 per unit

c) Advising the company on whether to it should market product omega in the new country

Income statement for product omega

Sales $900 \times 10,000$	9,000,000
Less: Cost	
Advertising expenses $10\% \times 9,000,000$	(900,000)
Travelling expenses $10\% \times 900,000$	(90,000)
Fixed production overheads	<u>(2,500,000)</u>
Profit	<u>5,510,000</u>

Advice: The Company should market product omega in the new country because it will generate a profit

TOPIC 9

BUDGETARY CONTROL

QUESTION 1

April 2024 Question Five B and C

(b) A flexible budget is known to be more appropriate for control purposes than a fixed budget.

Required:

- (i) By distinguishing between a “fixed budget” and a “flexible budget”, explain whether you agree or disagree with the above statement. (3 marks)
- (ii) Outline **THREE** benefits of budgetary control system in an organisation.(3 marks)
- (c) The following information relates to the projected activities of Detrix Ltd., a local manufacturing company for the year 2024:

	Wages	Materials purchased	Overhead cost	Sales
	Sh.“000”	Sh.“000”	Sh.“000”	Sh.“000”
January	18,000	60,000	30,000	90,000
February	24,000	90,000	36,000	120,000
March	30,000	75,000	48,000	180,000
April	27,000	105,000	42,000	150,000
May	36,000	90,000	54,000	210,000
June	30,000	75,000	48,000	180,000

July	27,000	75,000	42,000	150,000
August	27,000	90,000	42,000	150,000

Additional information:

1. It is expected that cash balance on 30 April 2024 will be Sh.66,000,000.
2. Wages are paid within the month they are incurred.
3. Creditors for raw materials are paid three months after receipt.
4. Debtors are expected to pay two months after delivery.
5. Included in the overhead figure is Sh.6,000,000 per month which represents depreciation.
6. There is a one-month delay in paying the overhead expenses.
7. 20% of the monthly sales are on cash basis.
8. A commission of 5% is paid to agents on all the sales on credit, but this is not paid until the month following the sales to which it relates. This expense is not included in the overhead figure.
9. The company intends to repay a loan of Sh.75,000,000 on 31 May 2024.
10. A delivery is expected in the month of June 2024 of a new machine costing Sh.135,000,000 of which Sh.45,000,000 will be paid in each of the following months.
11. The company has an overdraft facility with banks.

Required:

A cash budget for the months of May, June and July 2024.

(8 marks)

ANSWER

(b) Budgets

(i) By distinction between a “fixed budget” and a “flexible budget”

A **fixed budget** is a budgeted prepared for a defined level of activity and it is not intended to adjust with the changes in the level of activity whereas, a **flexible budget** is one designed for a given level of activity and it is intended to adjust to the changes that occur affecting the level of activity.

I strongly agree with the above statement that a flexible budget is more appropriate for control purposes than a fixed budget because a flexible budget gives room for adjustment for changes that affect the level of activity thus it's more reliable than a fixed budget in the analysis of variances

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(ii) Benefits of budgetary control system in an organization.

- Facilitates in cost control
- Serves as a basis for employee motivation
- Enhances communication among managers and employees across departments in the company
- Sets standards of performance for performance appraisals
- Facilitates decision making process for managers

- Facilitates in development of plans and forecast for future planning of activities of the company
- Helps in the optimal allocation of the scarcely available resources so as to increase productivity and profits for the company.

(c) A cash budget for the months of May, June and July 2024.

Basic workings (w)

1. Sales

Month	Jan Sh. „000“	Feb Sh. „000“	March Sh. „000“	April Sh. „000“	May Sh. „000“	June Sh. „000“	July Sh. „000“	Aug Sh. „000“
Cash (20%)	18,000	24,000	36,000	30,000	42,000	36,000	30,000	30,000
Credit (80%)	<u>72,000</u>	<u>96,000</u>	<u>144,000</u>	<u>120,000</u>	<u>168,000</u>	<u>144,000</u>	<u>120,000</u>	<u>120,000</u>
Total (100%)	<u>90,000</u>	<u>120,000</u>	<u>180,000</u>	<u>150,000</u>	<u>210,000</u>	<u>180,000</u>	<u>150,000</u>	<u>150,000</u>

2. Debtor's Collection

Month	Jan Sh. „000“	Feb Sh. „000“	March Sh. „000“	April Sh. „000“	May Sh. „000“	June Sh. „000“	July Sh. „000“	Aug Sh. „000“
Cash	-	-	<u>72,000</u>	<u>96,000</u>	<u>144,000</u>	<u>120,000</u>	<u>168,000</u>	<u>144,000</u>

3. Commission

Month	Jan Sh. „000“	Feb Sh. „000“	March Sh. „000“	April Sh. „000“	May Sh. „000“	June Sh. „000“	July Sh. „000“	Aug Sh. „000“
5% credit sales	<u>3600</u>	<u>4800</u>	<u>7200</u>	<u>6000</u>	<u>8400</u>	<u>7200</u>	<u>6,000</u>	<u>6,000</u>
Cash	-	<u>3600</u>	<u>4800</u>	<u>7200</u>	<u>6000</u>	<u>8400</u>	<u>7200</u>	<u>6000</u>

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4. Creditors

Month	Jan Sh. „000“	Feb Sh. „000“	March Sh. „000“	April Sh. „000“	May Sh. „000“	June Sh. „000“	July Sh. „000“	Aug Sh. „000“
Cash	-	-	-	60,000	90,000	75,000	105,000	90,000

5. Overhead cost net of depreciation

Month	Jan Sh. „000“	Feb Sh. „000“	March Sh. „000“	April Sh. „000“	May Sh. „000“	June Sh. „000“	July Sh. „000“	Aug Sh. „000“
Total	30,000	36,000	48,000	42,000	54,000	48,000	42,000	42,000
Less Dep.	6000	6000	6000	6000	6000	6000	6000	6000
	<u>24,000</u>	<u>30,000</u>	<u>42,000</u>	<u>36,000</u>	<u>48,000</u>	<u>42,000</u>	<u>36,000</u>	<u>36,000</u>
Cash	-	24,000	30,000	42,000	36,000	48,000	42,000	36,000

Detrix Ltd.

Cash budget for the months of May – July 2024

Month	May Sh. „000“	June Sh. „000“	July Sh. „000“
Cash receipts:			
Sales (w_1)	42,000	36,000	30,000
Debtors collection (w_1)	<u>144,000</u>	<u>120,000</u>	<u>168,000</u>
Total cash receipts (A)	<u>186,000</u>	<u>156,000</u>	<u>198,000</u>
Cash payments:			
Wages	36,000	30,000	27,000
Creditors w_4	90,000	75,000	105,000
Commission w_3	6,000	8400	7200
Overheads w_5	36,000	48,000	42,000
Loan	75,000	-	-
Machine	-	-	<u>45,000</u>
Total cash payments (B)	<u>243,000</u>	<u>161,400</u>	<u>181,200</u>
Cash surplus (Deficit) (A-B)	(57,000)	(5400)	16,800
Cash Bal. $\frac{b}{d}$	<u>66,000</u>	<u>9,000</u>	<u>3600</u>
Cash Bal. $\frac{c}{d}$	<u>9000</u>	<u>3600</u>	<u>20,400</u>

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QUESTION 2

December 2023 Question One A

Discuss THREE essential features of a budget.

(6 marks)

ANSWER

Essential features of a budget.

- **Consistency:** Should be consistent with the company policy laid to attain the given objectives of the company.
- **Feasibility:** The cost estimates provided should be reasonable
- **Limiting factor:** Should consider the available resources of the organization
- **Presentation:** It is a statement expressed in monetary and, or physical units prepared for the implementation of the policy formulated by the management.

QUESTION 3

December 2023 Question Four B

Motomoto Ltd. operates standard costing system. The following budgeted information relates to its only product:

	Quantity	Unit price (Sh.)	Standard cost per unit (Sh.)
Direct material A	3 kilograms	140	420
Direct material B	2 kilograms	250	500
Direct labour	2 hours	105	110

Fixed overheads	<u>270</u>
Standard cost per unit	<u>1,300</u>

Budgeted production amounted to 800 units at a unit price of Sh.1,300.

Actual production data for the month of November 2023:

	Quantity	Sh.
Sales revenue	850 units	1,326,000
Direct material A	2,410 kilograms	(325,350)
Direct material B	1,000 kilograms	(270,000)
Direct labour	890 hours	(97,900)
Fixed overheads		<u>(229,500)</u>
Net profit		<u>403,250</u>

Actual output amounted to 850 units.

Additional information:

1. Budgeted fixed overheads for its product is based on budgeted output of 800 units per month.
2. Standard selling price was budgeted as Sh.1,600 per unit.
3. There was no opening or closing inventory of direct material.

Required:

Flexible budget profit statement. (6 marks)

ANSWER

Flexible budget profit statement

Basic workings (w)

1. **Sales revenue** $850 \times 1300 = \text{sh. } 1,105,000$

2. Direct material A:

Usage: $3 \times 850 = 2550 \text{ kgs}$

Cost : $2550 \times 140 = \text{sh. } 357,000$

3. Direct material B:

Usage: $2 \times 850 = 1700 \text{ kgs}$

Cost: $1700 \times 250 = \text{sh. } 425,000$

4. Direct labour :

Usage: $2 \times 850 = 1700 \text{ hours}$

Cost = $1700 \times 105 = \text{sh. } 178,500$

5. **Fixed overheads:** $800 \times 270 = \text{sh. } 216,000$

Motomoto Ltd.

Flexible budget profit statement for actual production for the month of November

2023

Quantity	Sh.
Sales revenue (w_1) 850 units	1,105,000
Direct material A (w_2)	(357,000)
Direct material B (w_3)	(425,000)
Direct labour (w_4)	(1,785,000)

Fixed overheads (w_5)	<u>(216,000)</u>
Net profit (loss)	<u>715,000</u>

QUESTION 4

August 2023 Question Two A

Explain **FOUR** reasons for budgeting in a business. (4 marks)

ANSWER

Reasons for budgeting in a business

- To allocate scarcely available resources in a more optimal manner so as to increase profitability of the business
- To control costs for performance evaluation and measurement
- To set standards of performance
- To know how much resources required to achieve the production needs of the business
- To enhance the coordination of activities of the individuals across the departments of the company
- To facilitate communication among employees in the business

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QUESTION 5

April 2023 Question Three C

Relei Ltd. is currently following a centralised material storage system. The company is in

the process of preparing its cash budget for the second-quarter of the year 2023 and has availed the following data:

Month	Sales	Material purchases	Production overheads	Selling overheads	Salaries and wages
	Sh.“000”	Sh.“000”	Sh.“000”	Sh.“000”	Sh.“000”
January	144,000	50,000	12,000	11,000	20,000
February	200,000	62,000	12,300	12,400	24,000
March	180,000	50,500	13,000	15,500	20,000
April	150,000	60,600	17,500	18,900	36,000
May	205,000	74,000	17,700	22,000	40,000
June	208,000	76,800	16,400	23,200	48,000

Additional information:

1. Cash sales are 60% of the total sales. The remaining sales are collected equally during the following two months.
2. Assets are to be acquired in the month of April 2023 and May 2023.
Therefore, provisions should be made for payment of Sh.16,000,000 and Sh.65,000,000 for the same.
3. An application has been made to the bank for the grant of a loan of Sh.45,000,000 and it is hoped that the loan will be received in the month of May 2023.
4. Creditors for materials purchased are granted one-month credit after month of purchase.
5. Monthly production overheads include depreciation of Sh.5,000,000 per

month.

6. Selling overheads are paid one month after the month in which the overhead occurred.
7. Salaries commission at 3% on sales is paid to the salesmen each month.
8. Salaries and wages are paid monthly at the end of the month.
9. An advance tax of Sh.20,000,000 is due in April 2023.
10. The cash balance as at 1 April 2023 is estimated as Sh.144,500,000.

Required:

A cash budget for the second quarter of the year commencing 1 April 2022 to 30 June 2023.

(12 marks)

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ANSWER

1. Sale

Month	Jan	Feb	March	April	May	June
	Sh.“000”	Sh.“000”	Sh.“000”	Sh.“000”	Sh.“000”	Sh.“000”
Cash 60%	86,400	120,000	108,000	90,000	123,000	124,800
Credit 40%	57,600	80,000	72,000	60,000	82,000	83,200
Total 100%	144,000	200,000	180,000	150,000	205,000	208,000

2. Debtors collection

Month	Jan	Feb	March	April	May	June
	Sh.“000”	Sh.“000”	Sh.“000”	Sh.“000”	Sh.“000”	Sh.“000”
1 st 50%	-	28,800	40,000	36,000	30,000	41,000
2 nd 50%	-	-	28,800	40,000	36,000	30,000
Total			68,800	76,000	66,000	71,000

3. Creditors payment

Month	Jan	Feb	March	April	May	June
	Sh.“000”	Sh.“000”	Sh.“000”	Sh.“000”	Sh.“000”	Sh.“000”
Payment	-	50,000	62,000	50,500	60,600	74,000

4. Salaries commission

Month	Jan	Feb	March	April	May	June
	Sh.“000”	Sh.“000”	Sh.“000”	Sh.“000”	Sh.“000”	Sh.“000”
Sales	144,000	200,000	180,000	150,000	205,000	208,000
Commis sion 3%	4320	6,000	5,400	4,500	6,150	6,240

5. Production overheads

Month	Jan	Feb	March	April	May	June
	Sh.“000”	Sh.“000”	Sh.“000”	Sh.“000”	Sh.“000”	Sh.“000”
Overheads	12,000	12,300	13,000	17,500	17,700	16,400
Less dep- reciation	5,000	5,000	5,000	5,000	5,000	5,000
Net	7,000	7,300	8,000	12,500	12,700	11,400

6. Selling overheads

Month	Jan	Feb	March	April	May	June
	Sh.“000”	Sh.“000”	Sh.“000”	Sh.“000”	Sh.“000”	Sh.“000”
Payment	-	11,000	12,400	15,500	18,900	22,000

Relei Ltd A cash budget for the second quarter of year commencing 1, April 2023 to 30 June 2023.			
Month	April	May	June
Cash receipts	Sh.“000”	Sh.“000”	Sh.“000”
Cash sales (W1)	90,000	123,000	124,800
Debtors collection (W2)	76,000	66,000	71,000
Loan	-	45,000	-
Total cash receipts (A)	<u>166,000</u>	<u>234,000</u>	<u>195,800</u>
<u>Cash payments</u>			
Creditors (W3)	50,500	60,600	74,000
Salaries commission (W4)	4500	6,150	6,240
Production overheads (W5)	12,500	12,700	11,400
Assets	16,000	65,000	-
Salaries and wages	36,000	40,000	-
Selling overheads (W6)	15,500	18,900	22,000
Advance tax	20,000	-	-
Total cash payments (B)	<u>155,000</u>	<u>203,350</u>	<u>161,640</u>
Surplus (deficit) A -B	11,000	30,650	34,160
Opening cash balance	144,500	155,500	186,150
Closing cash balance	<u>155,500</u>	<u>186,150</u>	<u>220,310</u>

QUESTION 6

December 2022 Question One (a)

Outline **SIX** benefits that would accrue to an organisation that encourages employees to participate in budget preparation. (6 marks)

ANSWER

1. **Developing a stronger society:** The participation of all employees in the company management makes it easier to create a reliable employee community. When setting a budget, the involvement of the employees in such processes makes them feel valued hence contributing more to such activities.
2. **Improved Accuracy and Realism:** Employees who are directly involved in budget preparation have firsthand knowledge of operational needs, resource requirements, and potential cost-saving opportunities. Their insights and expertise can contribute to more accurate and realistic budget estimates, reducing the chances of overestimating or underestimating financial needs.
3. **Improving communication:** Employee participation can also help improve communication where communication barriers are reduced. Thus, an employee with solid communication skills will effectively help simplify the setting of the company budget.
4. **Boosts Productivity:** Employees who participate in the company activities help increase the company's productivity. Thus, taking part in the decision-making

processes within the budgeting committee boosts their decision-making and the long-run productivity of the organization.

5. **Increased Accountability:** When employees participate in budgeting, they become more aware of the financial implications of their actions and decisions. This heightened awareness promotes a sense of accountability for managing resources effectively and efficiently. Employees are more likely to make informed choices that align with budgetary constraints and organizational priorities.
6. **Increased quality of products:** in organizational operations, employee participation can help improve the quality of products produced by the company. Employees informed of the company's direction may help the management make better budgeting decisions that benefit the company.
7. **Trust and Morale Boost:** Employee involvement in budget preparation demonstrates that the organization values their input and trusts them to contribute meaningfully to strategic financial decisions. This recognition and trust can boost employee morale, job satisfaction, and overall engagement levels. Employees are more likely to feel valued, motivated, and loyal to an organization that actively seeks their input.

QUESTION 7

August 2022 Question Two (a)

Distinguish between “flexible budget” and “activity based costing” as used in management accounting.

(4 marks)

ANSWER

Flexible Budget: A flexible budget is a budget that is prepared for different levels of activity or capacity utilization or volume of output. If the budgets are prepared in such a way so as to change in accordance with the volume of output, they are called flexible budgets. These can be prepared from fixed budget which are also called revised budgets. These are much helpful in comparison with actual because the exact deviations are found for which timely corrective action can be taken.

Activity-Based Costing (ABC) is a costing methodology that allocates costs to specific activities or cost drivers, and then assigns those costs to products, services, or customers based on the activities they consume. It aims to provide more accurate and detailed insights into the cost structure of an organization by linking costs to the activities that drive them.

QUESTION 8

August 2022 Question Three (b)

NIE Social Academy conducts an entrance test for every new student whereby a final selection of 100 students is made. The entrance test consists of four key areas and is spread over four days, one examination per day. Being a community based institution, each student is charged a fee of Sh.500 for taking up the test. The following data relates to the two months in the previous holiday:

Statement of net revenue from the entrance tests		May
	April	
	Sh.	Sh.
Gross revenue (fees collected)	100,000	150,000
Costs:		
Evaluation	40,000	60,000
Question booklets	20,000	30,000
Hire of hall at Sh.2,000 per day	8,000	8,000
Honoraria to chief invigilator	6,000	6,000
Supervision charges (on supervision of every 100 candidates at the rate of Sh.500 per day)	4,000	6,000
General administrative expenses	<u>6,000</u>	<u>6,000</u>
Total cost	<u>84,000</u>	<u>116,000</u>
Net Revenue	<u>16,000</u>	<u>34,000</u>

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Required:

- (i) Budgeted net revenue for 4,000 students. (8 marks)
- (ii) Break-even number of candidates. (4 marks)
- (iii) Number of candidates to be enrolled if the net income desired is Sh.200,000 in the following month. (2 marks)

ANSWER

(i) Budgeted net revenue for 4,000 students.

$$(1) \text{ No of students} = \frac{\text{Gross revenue}}{\text{charge fee}} = \frac{100,000}{500} = 200 \text{ students} - \text{April}$$
$$= \frac{150,000}{500} = 300 \text{ students} - \text{May}$$

(2) Costs per student in:

Evaluation

$$= \frac{40000}{200} = \text{sh.}200 \quad \text{or} \quad = \frac{60000}{300} = \text{sh.}200 \text{ hence variable cost}$$

Evaluation cost for 4000 students

$$= 4000 \times 200 = \text{sh.}800,000$$

Question booklets:

$$= \frac{20000}{200} = \text{sh.}100 \quad \text{or} \quad = \frac{30000}{300} = \text{sh.}100 \text{ hence variable cost}$$

Cost of question booklets for 4000 students:

$$= 4000 \times 100$$

$$= \text{sh.}400,000$$

Hire of hall at sh.2000 per day = sh.8000, hence fixed cost

Honoraria to chief invigilator = sh.6000 hence fixed cost

Supervision charges for 4000 students

$$= \frac{4000}{100} \times 500 \times 4$$

$$= \text{sh.}80,000$$

General administration expenses = sh.6000, hence fixed cost

Statement of net revenue from the entrance tests for 4000 students

	Sh.
Gross revenue (fees collected) (4000× 500)	2,000,000
Less Costs:	
Evaluation	800,000
Question booklets	400,000
Hire of hall at sh.2000 per day	8000
Honoraria to chief invigilator	6000
Supervision charges	80,000
General administrative expenses	<u>6000</u>
Total cost	<u>1,300,000</u>
Net revenue	<u>700,000</u>

(ii) Break-even number of candidates.

$$= \frac{\text{Total fixed costs (TFC)}}{\text{Unit contribution}}$$

Total fixed costs	Sh.
Hire of hall	8,000
Honoraria to chief invigilator	6,000
General administrative expenses	6,000
Total	20,000

Variable costs per day

	Sh
Evaluation	200
Question booklets	100
Supervision charges	<u>20</u>
Total	<u>320</u>

Fee charged = Sh. 500 per student

Break even number of candidates

$$\frac{\text{Sh. } 20,000}{320}$$

= 111 candidates (Approx)

(iii) Number of candidates to be enrolled

Hint: use break-even point (B.E.P) at target profit.

Where,

$$\text{BEP} = \frac{\text{TFC} + \text{Target profit}}{\text{Unit contribution}}$$

$$\frac{200,000 + 20,000}{500 - 320}$$

$$= 1222$$

QUESTION 9

April 2022 Question Four (b)

Bahati Limited operates a chemical process which produces four different products namely C, F, T and S from the input of raw materials plus water.

Budget information for the forthcoming financial year is as follows:

Sh. "000"

Raw materials cost	268
Initial processing cost	264
Conversion cost	200

Product	Output	Sales	Additional processing cost
	(litres)	(Sh.000)	(Sh.000)
C	400,000	768	160
F	90,000	232	128
T	5,000	32	-
S	9,000	240	8

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Additional information:

1. The company's policy is to apportion the costs prior to the split-off point on a method based on net realisable value (NRV).
2. Currently, the intention is to sell product T without further processing, but to process the other three products after the split-off point.
3. An alternative strategy is being proposed so as to sell all the four products at the split-off point without further processing. If this were done, the selling prices obtainable would be as follows:

Product	Selling price per litre (sh.)
C	1.28
F	1.60
T	6.40
S	20

Required:

- (i) Budgeted profit statement showing the profit or loss for each product assuming the current processing policy is adopted. (8 marks)
- (ii) The profit or loss by product, and in total, assuming the alternative strategy was to be adopted. (8 marks)

ANSWER

(i) Budgeted profit statement

Original total cost

$$= 268,000 + 264,000 + 200,000$$

$$= \text{Sh.}732,000$$

Product	Sales („000“	Additional processing costs („000“	NRV („000“
C	768	160	608
F	232	128	104
T	32	0	32
S	240	8	<u>232</u>
Total			<u>976</u>

Joint costs apportioned using Net realizable value

	C	F	T	S
Sales value	768,000	232,000	32,000	240,000
Post separation costs	<u>(160,000)</u>	<u>(128,000)</u>	<u>0</u>	<u>(8,000)</u>
Net realizable value	608,000	104,000	32,000	232,000
Separate costs	160,000	128,000	0	8,000
Pre-split costs	456,000	78,000	24,000	174,000
Total costs	616,000	206,000	24,000	182,000
Profit	152,000	26,000	8,000	58,000

Total profit = 152,000 + 26,000 + 8,000 + 58,000

Sh. 244,000

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(ii) The profit or loss by product

Product	Output	S.P at L	Total
C	400,000	1.28	512,000
F	90,000	1.60	144,000
T	5,000	6.40	32,000
S	9,000	20.00	180,000
			<u>868,000</u>

Apportionment joint costs

$$C = \frac{512,000}{868,000} \times 732,000$$

$$= \text{Sh. } 431,779$$

$$F = \frac{144,000}{868,000} \times 732,000 = 121,438$$

$$T = \frac{32,000}{868,000} \times 732,000 = 26,986$$

$$S = \frac{180,000}{868,000} \times 732,000 = 151,797$$

Budgeted profit

	C	F	T	S	Total
Sales	512,000	144,000	32,000	180,000	868,000
Less: costs	431,779	121,438	26,986	151,797	732,000
Profit	80,221	22,562	5,014	28,203	136,000

QUESTION 10

April 2022 Question Five (a)

Smart products Ltd. operates standard costing and budgetary control system.

The following is the company's standard cost card:

	Sh.
Direct materials	120
Direct labour	60
Variable overheads	20
Fixed overheads	<u>30</u>
Standard cost per unit	230
Standard profit per unit	<u>20</u>
Standard selling price per unit	<u><u>250</u></u>

Additional information:

- Each unit requires 3 kgs of material which cost Sh.40 per kg and 45 minutes of direct labour at a rate of Sh.80 per hour.

2. Variable overheads are recovered on direct labour hour basis.
3. Fixed overhead are absorbed on annual production budget of 180,000 units.
4. For the year to 31 March 2022, 120,000 units had been manufactured and sold. Contrary to the managements expectation, the company's profit and loss statement reflected a loss of Sh.1,380,000 instead of the expected profit of Sh.3,6000,000 as provided below:

	(Sh.000)	(Sh.000)
Sales (120,000 units)		22,800
Production cost:		
Direct materials (100,000kgs)	12,000	
Direct labour (52,000 hours)	3,900	
Variable overheads	2,880	
Fixed overheads	<u>5,400</u>	<u>24,180</u>
Profit (loss)		<u>(1,380)</u>

Required:

- (i) Budgeted profit and loss account for the year ended 31 March 2022.
(6 marks)
- (ii) Flexible budget for the production achieved.
(6 marks)

ANSWER

(i) Budgeted profit

	Sh. ,000"	Sh. ,000"
Sales (180,000 units)		45,000
Production cost:		
Direct material (540,000)	21,600	
Direct labour (135,000 hours)	10,800	
Variable overheads	3,600	
Fixed overheads	<u>5,400</u>	<u>41,400</u>
Profit/ loss		<u>3,600</u>

(ii) Flexible budget

$$\text{Common ratio} = \frac{120,000}{180,000}$$

$$= 0.67$$

Flexible budget for production achieved

	Sh. _000‘	Sh. _000‘
Sales	(45,000 × 0.67)	30,150

Production cost:

Direct material	14,472	
Direct labour	7,236	
Variable overheads	2,412	
Fixed overheads	<u>5,400</u>	<u>29,520</u>
Profit (loss)		<u>630</u>

QUESTION 11

December 2021 Question Four

- (a) Outline six benefits that might accrue to an organisation as a result of preparing budgets. (6 marks)
- (b) You are in charge of making forecasts and preparing budgets for Kondele Ltd. You have been supplied with the following cost and revenue forecast and details of payments:

Forecast for revenue and costs for half year 2022

	January	February	March	April	May	June
	Sh."000"	Sh."000"	Sh."000"	Sh."000"	Sh."000"	Sh."000"
Direct material purchases	112.000	100.000	135,000	90,000	67,000	79.000
Wages	90,000	80.000	100.000	72.000	54.000	63.000
Overheads						
Production	34.000	32.000	40.000	45.000	36.000	40,000
Administrative	22,000	20.000	27,000	24.000	25,000	27.000
Selling and distribution	13.000	11.000	18.000	13.000	11,000	16.000
Sales	360.000	350,000	440.000	350.000	360,000	360.000

Additional information:

- Cash balance on 1 April 2022 is expected to be Sh.90 million.
- Period of credit allowed by suppliers averages two months.

3. Debentures worth Sh.125 million are expected to be issued in May 2022 and the amount will be received in the same month.
4. A new machine will be installed in March 2022 at a cost of Sh.150 million and payment is expected in May 2022.
5. Sales commission of 3% is payable after one month of sale.
6. A dividend of Sh.100 million is to be paid in June 2022.
7. There is a delay of one month in the payment of overheads and wages.
8. Twenty percent of the debtors pay cash, receiving a cash discount of 4% and seventy per cent of debtors pay within one month and receive 2.5% discount while the remaining debtors pay within two months without a discount.

Required:

A cash budget on a monthly basis for the months of April 2022 to June 2022.

(14 marks)

ANSWER

a) Benefits that might accrue to an organisation as a result of preparing budgets.

- To compel planning
- To communicate ideals and plans
- To ensure the achievements of the organization's objectives.
- To coordinate activities
- To provide a framework for responsibility accounting

- To establish a system of control
- To motivate employees to improve their performance

b) Kondele Ltd.

Sales collection schedule

Month	Total	20%	70%	10%	
January	360,000	69,120	-	-	69,120
February	350,000	67,200	245,700	-	312,900
March	440,000	84,480	238,875	36,000	359,355
April	350,000	67,200	300,300	35,000	402,500
May	360,000	69,120	238,875	44,000	351,995
June	360,000	69,120	245,700	35,000	349,820

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Cash budget

	April Sh. =000'	May Sh. =000'	June Sh. =000'
Balance b/f	90,000	194,300	221,795
Sales receipts	402,500	351,995	349,820
Debenture issue		125,000	
	<u>492,500</u>	<u>671,295</u>	<u>571,615</u>
Payments			
Supplier payments	100,000	135,000	90,000
Wages	100,000	72,000	54,000
Production overheads	40,000	45,000	36,000
Admin overheads	27,000	24,000	25,000
S and D overheads	18,000	13,000	11,000

Sales commission	13,200	10,500	10,800
Machine payment		150,000	
Dividend			100,000
	298,200	449,500	326,800
Bal c/f	194,300	221,795	244,815

QUESTION 12

September 2021 Question Four B

MK Enterprises produces and sells two products branded "M" and "K" which are used as raw materials in production of wall paint. The cost accountant has provided the following monthly data for budgeting purposes:

Product	M	K
Sales level (units)	2,000	1,500
Opening stock (units)	100	200
Materials required:		
Exe (kgs)	2	3
Zed (litres)	1	4
Labour hours required:		
Skilled labour (hours)	4	2
Semi-skilled labour (hours)	2	5

Additional information:

1. Material costs are as follows:

Exe per kg Sh.100

Zed per litre Sh.70

2. Labour costs are as follows

Skilled labour per hour Sh.120

Semi-skilled labour per hour Sh.80

3. Closing stock of materials and finished goods will be sufficient to meet 10% of demand.

4. Opening stocks for material Exe was 300kgs and for material Zed was 1,000 litres.

Required:

Prepare the following budgets:

- (i) Production budget in units. (3 marks)
- (ii) Materials usage budget in kilograms and litres. (3 marks)
- (iii) Materials purchases budget in kilograms, litres and shillings. (4 marks)
- (iv) Labour budget in hours and shillings. (4 marks)

ANSWER

MK Enterprises

Required:

- (i) **Production budget in units.**

	Product	
	M	K
Sales (units)	2,000	1,500
Add: closing stock	200	150
Less: Closing stock	<u>(100)</u>	<u>(200)</u>
Units produced	<u>2,100</u>	<u>1,450</u>

(ii) Materials usage budget in kilograms and litres.

	Product		
	M	K	
Material			Total
Exe (kg)	4,200	4,350	8,550kgs
Zed (litres)	2,100	5,800	7,900 litres

~

(iii) Materials purchases budget in kilograms, litres and shillings.

	Exe (kg)	Zed (litres)
Current usage	8,550	7,900
Add: closing inventory	855	790
Less: opening inventory	<u>(300)</u>	<u>(1,000)</u>

Materials to be purchased	9,105	7,690
Cost per unit (Sh)	<u>100</u>	<u>70</u>
Material purchase budget	Sh. <u>910,500</u>	<u>538,300</u>

(iv) Labour budget in hours and shillings.

Product			
	M	K	
	Sh	Sh	Total
Skilled	1,008,000	348,000	1,356,000
Semi-skilled	336,000	580,000	916,000
			2,272,000

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QUESTION 13

May 2021 Question Two B

ZigZag Ltd. prepared the following budget for the first five months of the year 2020:

Month	Sales budget (Units)
January	10,800
February	15,600
March	12,200
April	10,400
May	9,800

Additional information:

1. Inventory of finished goods at the end of every month is to be equal to 25% of sales estimate for the next month.
2. On 1 January 2020, there were 2,700 units of the product on hand.
3. There is no work-in-progress at the end of any month.
4. The selling price per unit was estimated to be Sh.450 per unit.
5. Each unit of the product requires two types of materials in the following quantities:

Material A: 4 Kgs.

Material B: 5 Kgs.

6. The closing stock of materials is equal to half of the requirements of the next month's production.

Required:

For the months of February, March and April 2020, prepare:

- | | | |
|-------|----------------------------------|-----------|
| (i) | Sales budget. | (3 marks) |
| (ii) | Production budget. | (6 marks) |
| (iii) | Materials usage budget in units. | (6 marks) |

ANSWER

(a) i) Sales budget

Month	Quantity	Price	Value
Jan	10,800	450	4,860,000
Feb	15,600	450	7,020,000
March	12,200	450	5,490,000
April	10,400	450	4,680,000
May	<u>9,800</u>	450	<u>4,410,000</u>
	<u>58,800</u>		<u>26,460,000</u>

ii) Budget of production quantities

Month	January	February	March	April	May
Sales	10,800	15,600	12,200	10,400	9,800
Closing stock	<u>3,900</u>	<u>3,050</u>	<u>2,600</u>	<u>2,450</u>	=
Unit produced	<u>14,700</u>	<u>18,650</u>	<u>14,800</u>	<u>12,850</u>	<u>9800</u>

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(iii) Material wage budget

Material	Jan	Feb	March	April	May	Total units
A (4 kg)	58,800	74,600	59,200	51,400	39,200	283,200 kg
B (5 kg)	73,500	93,250	74,000	64,250	49,000	<u>354,000 kg</u>
						<u>637,200kg</u>

QUESTION 14

November 2020 Question Two A

Discuss four objectives of budgetary control system in an organisation. (8 marks)

ANSWER

Objectives of budgetary control system to an organization

- **To ensure the achievement of the organizations:** Objectives are set for the organization as a whole and for individual departments and operations within the organization. Quantified expressions of these objectives are then drawn up as targets to be achieved within the time scale of the budget plan
- **Communicate ideas and plans:** A formal system is necessary to ensure that each person affected by the plans is aware of what he or she is supposed to be doing. Communication might be one-way with managers giving orders to subordinate or there might be a two-way dialogue and exchange of ideas
- **Provide a framework for responsibility accounting:** Budgetary planning and control systems require that managers of budget centers are made responsible for the achievement of budget targets for the operations under their personal control
- **Establish a system of control:** A budget is a yardstick against which actual performance is monitored and assessed. Control over actual performance is provided by comparisons of actual results against the budget plan. Departures from budget can then be investigated and the reasons for departures can be divided into controllable and uncontrollable factors

- **Motivate employees to improve their performance:** The interest and commitment of employees can be retained via a system of feedback of actual results, which lets them know how well or badly they are performing. The identification of controllable reasons for departures from budget with managers provides an incentive from improving future performance.
- **Provide a framework for authorization:** Once the budget has been agreed by the directors and senior managers, it acts as an authorization for each budget holder to incur the costs included in the budget center's budget. As long as the expenditure is included in the formalized budget, the budget holder can carry out day to day operations without needing to seek separate authorization for each item of expenditure
- **Planning:** Budgeting ensures effective planning by setting up of budgets.
- **Co-ordination:** Budgets are helpful in co-ordination of business activities
- **Efficiency and economy:** Effective budgetary control results in cost control and cost reduction
- **Increase in profitability:** Costs are controlled with the help of budgets and profits targeted are achieved
- **Anticipation of future capital expenditure:** Estimated increases in sales necessitating higher production capacity provides advance warning for the possible capital expenditure in near future

QUESTION 15

November 2019 Question Five B

Solhut Ltd. manufactures a product branded "PQ" which is sold at Sh.800 per unit. The variable costs per unit of product "PQ" are provided below:

	Sh.
Direct materials: M1 (2 Kgs at Sh.20 each)	40
Direct materials: M2 (3 Kgs at Sh.20 each)	60
Labour (2 hours at Sh.35 each)	70
Variable overheads at Sh.40 per hour	80

The management of Solhut Ltd. have estimated that for the first six months of the year ending 30 June 2020, the following quantities will be sold on credit:

Month:	January	February	March	April	May	June
Quantity (Units)	3,920	2,940	3,430	4,410	4,900	4,410

Additional information:

1. Customers will be allowed one month's credit.
2. The closing inventory for each month is equal to 10% of the next month's sales of product "PQ".
3. Production takes place in the month of sale.

4. Materials are purchased one month before use and are paid for two months after purchase.
5. Labour and variable overheads are paid for in the month of production.
6. Fixed overhead per month are expected to be Sh.300,000 and includes depreciation of Sh.35,000. The fixed overheads are payable in the month in which they are incurred.
7. The opening cash balance as at 1 February 2020, is expected to be Sh.2,500,000.

Required:

For the months of February 2020 to April 2020, prepare:

- (i) Production budget in units. (6 marks)
- (ii) Cash budget. (10 marks)

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ANSWER

Working

Sales collection schedule

Month	Jan	Feb	March	April	May	June
Sales sh.00	3136	2352	2744	3528	3920	3528
Collection	-	3136	2352	2744	3528	3920

i) Production budget

Details	Feb	March	April
B. Sales(unit)	2940	3430	4410
Add: closing stock	343	441	490
Total requirement	3283	3871	4900
Less: opening stock	(294)	(343)	(441)
budgeted production units	2989	5328	4459

Materials purchase payment schedule

Date	Feb	March	April
B. Production	2989	3528	4459
Purchase	3528	4459	4851
Payment (sh) (M1)			
Payment (M2)	152880	141120	

ii) Cash budget

Details	Feb	March	April
Opening balance	2,500,000	4,922,650	6,098,250
Add receipts:			
Sales	3,136,000	2,352,000	2,744,000

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Total cash available	5,636,000	7,274,650	88,442,250
Less payments			
Materials M1	-	152,850	119,560
Material M2		229,320	211,680
Labour	209,230	246,960	312,130
Variable overheads	239,120	282,240	356,720
Fixed overheads	265,000	265,000	265,000
Total payments	713,350	1,176,400	1,265,090
Balance	4,922,650	6,098,250	7,577,160

QUESTION 16

May 2019 Question Five A

Limu Processing Company Ltd. manufactures a standard product branded "LM".

Currently, it is operating on a normal activity level of 70% with an output of 6,300 units.

The sales director believes that a realistic forecast for the next budget period would be at an activity level of 50%. The following data relates to the forecasted costs of the product for different levels of activity:

	60%	70%	80%
	Sh.	Sh.	Sh.
Direct materials	151,200	176,400	201,600
Direct wages	64,800	75,600	86,400
Production overheads	150,400	164,800	179,200
Administration overheads	126,000	126,000	126,000

Selling and distribution overheads	169,200	176,400	183,600
Total cost	661,600	719,200	776,800

Profit is 20% of selling price.

Required:

(i) Flexible budget based on a 50% level of activity. (7 marks)

(ii) State three problems which might arise from such a change in the level of activity.

(3 marks)

ANSWER

i) Flexible budget based on a 50% activity level

W1

Margin	Markup
$\frac{20}{1100} = \frac{1}{55}$	$\frac{1}{5-1} = \frac{1}{4}$

W2

70% = 6300 units

50% = ?

$$\frac{50}{70} \times 6300 = 4500 \text{ units}$$

W3

Production overheads are partly fixed and partly variable and assume the form

$$y = a + bx$$

Where a = fixed cost

b = variable cost per unit

x = output

At 60% activity level

70% = 6,300 units

60% = ?

$$\frac{60}{70} \times 6300 = 5,400 \text{ units}$$

Subtracting equation (i) from equation

$$164,800 = a + 6,300b \text{ --- (i)}$$

$$\underline{150,400 = a + 5,400b \text{ --- (ii)}}$$

$$14,400 = 900b$$

$$\frac{14,400}{900} = \frac{900b}{900}$$

$$b = \text{Sh } .16$$

Substituting b into equation (ii)

$$150,400 = a + 5,400 \times 16$$

$$150,400 = a + 86,400$$

$$a = 150,400 - 86,400$$

$$= \text{Sh. } 64,000$$

$$y = 64,000 + 16x$$

At 50% activity level

$$y = 64,000 + 16x = 64,000 + (16 \times 4500)$$

$$= 64,000 + 72,000$$

$$= \text{Sh. } 136,000$$

W4

Selling and distribution overheads are partly variable and partly fixed and they are in the form $y=a+bx$

Where: $y = \text{Total cost}$

$a = \text{fixed cost}$

$b = \text{variable cost per unit}$

$x = \text{output in units}$

At 60% activity level

$$70\% = 6,300 \text{ units}$$

$$\frac{60}{70} \times 6,300 = 5,400 \text{ units}$$

$$176,400 = a + 6,300b$$

$$169,200 = a + 5,400b$$

$$\frac{900b}{900} = \frac{7,200}{900}$$

$$b = 8$$

Substituting b in equation (i)

$$176,400 = a + 6,300b$$

$$= 176,400 = a + (6,300 \times 3)$$

$$176,400 = a + 50,400$$

$$a = 126,000$$

$$y = 126,000 + 8x$$

At 50% level of activity

$$y = 126,000 + 8x$$

$$= 126,000 + 8 \times 4,500$$

$$= 126,000 + 36,000$$

$$= 162,000$$

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Limit processing company flexible budget at 50% activity level

	Sh.	Sh.
Direct materials	$\frac{50}{70} \times 176,400$	126,000
Direct wages	$\frac{50}{70} \times 75,600$	54,000
Production overheads	W3	136,000
Admin overheads		126,000

Serving & distribution overheads	W4	<u>162,000</u>
Total cost	$(\frac{1}{4} \times 604,000)$	604,000
Markup		<u>151,000</u>
Selling price		<u>755,000</u>

ii) Problems which might arise from such a change in the level of activity

- Fixed costs don't change hence will affect profit of the firm
- The company may fail to meet the customer's requirements
- It would lead to most of the firm's staff being idle
- There could a lot of idle capacity in the firm.

QUESTION 17

November 2018 Question One A

A budgetary control system could prove successful only when certain conditions and essentials exist".

With reference to the above statement, highlight six conditions and essentials for an effective budgetary system. (6 marks)

ANSWER

Condition and essentials of an effective budgetary system:

- **Sound administration:** Budgets cannot replace good management, budgets should be administered efficiently by responsible executives
- **Reward and punishment:** The concerned employees should be suitably rewarded for performance as per the budget but lazy employees should not go unpunished
- **Results take time:** the budgetary control is an efficient to control performance but it requires time to show results. Those who administer budgetary control should have a high degree of knowledge and experience in the field.
- **Constant review:** this is necessary so as to prevent them from degenerating into licence for spending the full budgeted amount even though it may be unnecessary.
- **Proper co-ordination:** proper coordination of budget plans is essential to eliminate constraints. Individual budgets should be coordinated with another.
- **Efficient organization:** a good organization structure is essential for success in budgeting. There should be fixed budget controller, responsibility centers and budget committee.
- **Flexibility:** it should be possible to change budget if business conditions change.
- **Enforce timeliness:** budgets must be prepared so as to be ready before the period to which they relate, moreover sufficient time should be allowed for the budget programme.
- **Goal orientation:** Budgets must directly flow from objectives of the enterprise and goals of budgetary control must be clearly defined

- **Sound forecasting:** the estimates for the future should be precise and accurate. A scientific forecasting system gives adequate and reliable data for budgeting.
- **Top management support:** since budgeting points out inefficiencies there is bound to be resistance. This makes it more critical that top management should believe in the importance of budgetary control. Thus, the overall budgets must be set any approved at the chief executive level proper recording system; sound accounting procedures should be allowed for proper recording of actual operations. Unless the actual performance is accurately recorded and quickly reported; the whole structure of budgeting will fall budgeting is greatly helped if there is also the system of standard: costing in use

QUESTION 18

November 2018 Question Five B

Summarise four functions of a budget committee.

(4 marks)

ANSWER

Functions of budget committee

- Continuous assessment of the budgeting and planning process, in order to improve the planning and control functions
- Comparison of actual results with the budget and the investigation of the variances
- Communications of final budget to the appropriate managers
- Provision of information to assist in the preparation of budgets

- Allocation of responsibilities of the preparation of functions budgets
- Issuing of timetables for the preparation of functional budgets
- Issuing of timetables for the preparation of functional budgets
- Coordination of the preparation of budgets, which includes the issue of the budget manual.

QUESTION 19

May 2018 Question Three B

Better Designs Ltd. manufactures a single product using a single grade of labour. Its sales budget and finished goods inventory budget for the third quarter of the year 2018 are as follows:

	Units
Sales	7,000
Opening inventories finished goods	500
Closing inventories finished goods	700

Additional information:

1. The goods are inspected only when production work is completed and it is budgeted that 10% of finished work will be scrapped.
2. Standard direct labour hours per unit is 3.
3. The budgeted productivity ratio for the direct labour is only 80% (which means that labour is working at 80% efficiency).

4. The company employs 18 direct employees who are expected to average 1,440 working hours each for the quarter.

Required:

- (i) Production budget for the quarter. (4 marks)
- (ii) Direct labour budget. (4 marks)
- (iii) Calculate the shortfall in direct labour hours. (2 marks)

ANSWER

i) Production budget for quarter

Production budget for quarter	
Sales units	7,000
Add: Closing inventory	700
Less: Opening inventory	(500)
Units remaining after scrapping	7,200
Units scrapped $\left(\frac{10}{90} \times 7200\right)$	<u>800</u>
Units produced	<u>8,000</u>

ii) Direct labour budget for quarter

$$\begin{aligned} \text{Direct labour hours required} &= \text{Units produced} \times \text{Labour hours per unit} \\ &= 8,000 \times 3 = 24,000 \text{ hours} \end{aligned}$$

Total hours needed taking into accounting

$$\text{The idle time} \quad \frac{100}{80} \times 24000$$

$$= 30,000 \text{ hours}$$

iii) Total hours worked by all workers for whole quarter

$$1440 \times 18 = 25,920 \text{ hours.}$$

$$\text{Shortfall in direct labour hours} = 30,000 - 25,920 = 4080 \text{ hours}$$

QUESTION 20

November 2017 Question Five A

Megspa Ltd manufactures a single product branded —We”

The following data relates to its operations for the month of October 2017:

	Budget	Actual
	Units	Units
Sales	60,000	58,000
Production	60,000	60,000
	Sh.	Sh.
Sales	840,000	823,600
Direct materials	240,000	246,000
Direct labour	300,000	288,000
Fixed overheads	135,000	140,000
Net income	165,000	149,600

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Required:

A flexed budget for the month of October 2017 for the actual sales of 58,000 units

(6 marks)

ANSWER

A Flexed budget for the month of October 2017 for the actual sales of 58,000 units

$$\text{Common ratio} = \frac{\text{Actual units}}{\text{Budgeted units}}$$

$$\text{Common ratio} = \frac{58,000}{60,000} = 0.9667$$

Megspa Ltd.		
Flexed budget for the month of October 2017		
	Budget	Flexed
	Sh.	Sh.
Sales	840,000×0.9667	832,280
Direct materials	240,000×0.9667	232,080
Direct labour	300,000×0.9667	290,100
Fixed overheads	135,000×1	<u>135,000</u>
Net income		<u>155,100</u>

QUESTION 21

May 2017 Question Five B

Maramat Ltd. manufactures a single product branded "PQ"

The budgeted sales for the month of June 2017 amount to 10,000 units at a selling price of Sh.2,000 per unit.

Additional information:

1. One unit of "PQ" requires two components namely; X and Y as follows:

Component	Number	Unit cost of each component
		Sh.
X	5	20
Y	3	10

2. Stocks at the beginning of the month are budgeted as follows:

- 4,000 units of finished goods at a unit cost of Sh.1,050
- Component X: 16,000 units at a unit cost of Sh.20
- Component Y: 9,600 units at a unit cost of Sh.10

3. Production cost of each unit requires the following labour hours:

Department	Hours per unit	Labour rate per hour
		Sh.
Production	4	100
Finishing	2	140

4. Factory overhead is absorbed into unit cost on the basis of direct labour hours. The budgeted overhead for the month is Sh.1,920,000.
5. Administration, selling and distribution overheads for the month are budgeted at Sh.5,500,000.

6. The company plans a reduction of 50% in quantity of finished goods at the end of the month and an increase of 25% in the quantity of each input component.

Required:

For the month of June 2017:

- (i) Sales budget. (1 mark)
- (ii) Production quantity budget. (2 marks)
- (iii) Material usage budget. (2 marks)
- (iv) Material purchase budget. (3 marks)
- (v) Direct labour budget. (2 marks)
- (vi) Budgeted profit and loss account. (6 marks)

ANSWER

i) Sales budget

Product	Units sold	Selling price	amount
PQ	10,000	2,000	20,000,000

ii) Production quantity budget

Budgeted sales units	10,000
<i>Add:</i> closing stock finished goods	2,000
	12,000
<i>Less:</i> opening stock finished goods	(4,000)
Units to be produced	8000

iii) Material usage budget

Component	Units required	Total
X	8000×5	40,000
Y	8000×3	24,000

iv) Material purchase budget

Component	X	Y
Material usage	40,000	24,000
Add: closing stock	20,000	12,000
	60,000	36,000
Less opening stocks	(16,000)	9,600
Units to be bought	44,000	26,400
Purchase price per unit	20	10
Total purchase price	<u>880,000</u>	<u>264,000</u>

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v) Direct labour budget

Department	Hours required	Cost per hour	Total labour cost in sh.
Production	8000×4 =32,000	100	3,200,000
Finishing	8000×2= 16,000	140	<u>2,240,000</u>
			<u>5,440,000</u>

vi) Budgeted profit and loss account

	Sh.	Sh.
Sales	10,000×2000	20,000,000
<i>Less:</i>		
Direct labour cost	5,440,000	
Direct material cost	1,144,000	
Prime cost		6,584,000

Contribution		13,416,000
Factory overheads	1,920,000	
Admin,selling & distribution	5,500,000	(7,420,000)
Net profit		<u>5,996,000</u>

QUESTION 22

November 2016 Question Three B

Describe four functions of a budget committee.

(4 marks)

ANSWER

Functions of budget committee

- To submit budget estimates to the board for approval of budgets.
- To co-ordinate the proper implementation of budgets.
- To submit the budget committees report relating to budgeted and actual results.
- To receive and check budget estimates.
- To issue instructions to various departments in respect of submitting budget estimates.
- To assist the departmental managers prepare their budget estimates.

QUESTION 23

November 2016 Question Four

Pwani Ltd operates a chemical process which produces four different products namely; A, B, C and D from the input of one raw material. Budget information for the forthcoming financial year is as follows:

Sh. “000”			
Raw materials cost		268	
Initial processing cost		464	

Product	Output in litres	Sales Sh. “000”	Additional processing costs Sh. “000”
A	400,000	768	160
B	90,000	232	128
C	5,000	32	-
D	9,000	240	8

Additional information:

1. The company’s policy is to apportion the costs prior to the split-off point on a method based on net sales value.
2. The current intention is to sell product C without further processing but to process the other three products after the split-off
3. The alternative strategy would be to sell all the four products at the split-off point without further processing. If this was to be done, the selling prices obtainable would be as follows:

Product	Price per litre (Sh.)
----------------	------------------------------

A	1.28
B	1.60
C	6.40
D	20.00

Required:

- a) Budgeted profit statement showing the profit or loss for each product and in total if the current intention is adopted. (10 marks)
- b) Determine the profit or loss by product and in total if the alternative strategy was to be adopted. (6 marks)
- c) Recommend what should be done and why assuming there is no more profitable alternative use for the plant. (4 marks)

ANSWER

a) Budgeted profit statement

$$\begin{aligned} \text{Total joint process costs} &= \text{Raw material cost} + \text{initial processing costs} \\ &= 268000 + 464000 = 732,000 \end{aligned}$$

Product	Sales Sh. „000“	Additional process costs Sh. „000“	Net sales value Sh. „000“
A	768	160	608
B	232	128	104
C	32	-	32
D	<u>240</u>	<u>8</u>	<u>232</u>
	<u>1.272</u>	<u>296</u>	<u>976</u>

Apportionment of joint costs

Product	Apportionment	Sh. „000“
A	$608/976 \times 732$	456
B	$104/976 \times 732$	78
C	$32/976 \times 732$	24
D	$232/976 \times 732$	174

Pwani Ltd Budgeted Profit statement					
Product	A Sh. „000“	B Sh. „000“	C Sh. „000“	D Sh. „000“	Total Sh. „000“
Sales	768	232	32	240	1,272
Less:					
Apportioned joint costs	(456)	(78)	(24)	(174)	(732)
Further processing costs	<u>(160)</u>	<u>(128)</u>	=	<u>(8)</u>	<u>(296)</u>
Net profit	<u>152</u>	<u>26</u>	<u>8</u>	<u>58</u>	<u>244</u>

(b) Alternative Strategy:

Sales of the products at split off point:

Product	Units (000)	Price	Sales Revenue Sh. „000“
A	400	1.28	512
B	90	1.60	144
C	5	6.40	32
D	9	20.00	<u>180</u>
			<u>868</u>

Profit statement

Product	A Sh. „000“	B Sh. „000“	C Sh. „000“	D Sh. „000“	Total Sh. „000“
Sales at split off	512	144	32	180	868
Less:					
Joint process costs	<u>(456)</u>	<u>(78)</u>	<u>124)</u>	<u>074)</u>	<u>(732)</u>
Net profit	<u>56</u>	<u>66</u>	<u>8</u>	<u>6</u>	<u>136</u>

(c)Recommendations on what should be done:

Profit summary:

Product	A Sh.,,000“	B Sh.,,000“	C Sh.,,000“	D Sh.,,000“	Total Sh.,,000“
Profit after further processing	152	26	8	58	244
Profit if sold at split off	56	66	8	6	134

Recommendation

To enhance profitability the following should be done.

- Process product A further since it will increase profit realized from sh.56,000 to sh 152,000
- Sell product B at split off since profit is highest at split off since profit is highest at split off.
- Sell product C at split off since there is no change in profitability.
- Process product D further since it will yield more profit if processed further as compared to selling at split off.

- If above recommendations are actualized, total profit will increase from shs.136,000 at split off to sh.284,000 after further processing.

QUESTION 24

November 2016 Question Five

The following information has been extracted from the books of Wazi Enterprises Ltd, a company dealing with manufacture of plastic containers.

The sales budget for the first six months of the financial year ending 31 December 2016 was as follows:

Month	January	February	March	April	May	June
Sales (units)	10,000	12,000	14,000	15,000	15,000	16,000

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Additional information:

1. Finished goods inventory at the end of each month is expected to be 20% of budgeted sales quantity for the following months.
2. Finished goods inventory was 2,700 units on 1 January 2016.
3. There would be no work in progress at the end of any month.
4. Each unit of finished product requires two types of raw materials as follows:

Material X: 4 kgs at Sh. 10 per kg

Material Y: 6 kgs at Sh. 15 per kg

5. Materials on hand on 1 January 2016 were 19,000 kgs of material X and 29,000 kgs of material Y.
6. Monthly closing stock of material is budgeted to be equal to half of the requirements of next month's production.
7. Budgeted direct labour hour per unit of finished product is % hours.
8. Budgeted direct labour cost for the first quarter of the year 2016 is Sh.1, 089,000.
9. Actual data for the quarter ended 31 March 2016 is as follows:

Actual production quantity: 40,000 units

Direct material cost (purchase cost based on materials actually issued to production)

Material X: 165,000 kgs at Sh. 10.20 per kg

Material Y: 238,000 kgs at Sh.15.10 per kg

Actual direct labour hours worked: 32,000 hours

Actual direct labour cost: Sh. 1,312,000

Required:

- a) i) Monthly production quantity for the quarter ended 31 March 2016. (4 marks)
- ii) Monthly raw material consumption quantity budget for the four months from January 2016 to April 2016. (4 marks)
- iii) Materials purchase quantity budget for the quarter ended 31 March 2016. (4 marks)
- b) Compute the following variances:
 - i) Material price variance. (2 marks)

- ii) Material usage variance (2 marks)
- iii) Direct labour rate variance (2 marks)
- iv) Direct labour efficiency variance. (2 marks)

ANSWER

a) Monthly Production budget for quarter ended 31st march 2016

	January	February	March	April
Sales units	10,000	12,000	14,000	15,000
<i>Add:</i> closing stock	2,400	2,800	3,000	3,000
<i>Less:</i> opening stock	(2,700)	(2,400)	(2,800)	(3,000)
Units to be produced	9,700	12,400	14,200	15,000

ii) Monthly raw Material consumption quantity budget for the four months from January 2016 to April 2016

	January	February	March	April
Material X	9,700×4=38,800	12,400×4=49,600	14,200×4=56,800	15,000×4=60,000
Material Y	9,700×6=58,200	12,400×6=74,400	14,200×6=85,200	15,000×6=90,000

iii) Material purchase quantity budget for quarter ended 31st march 2016

Total material usage X = 38,800+49,600+56,800+60,000 = 205,200 Kgs

Total material usage Y = 58,200+74,400+85,200+90,000= 307,800 kgs.

Material purchase quantity budget				
	January	February	March	Total
Material usage X	38,800	49,600	56,800	145,200
Y	58,200	74,400	85,200	217,800
Add: Closing stock X	24,800	28,400	30,000	83,200
Y	37,200	42,600	45,000	124,800
Less: Opening stock X	(19,000)	(24,800)	(28,400)	(72,200)
Y	<u>(29,000)</u>	<u>(37,200)</u>	<u>(42,600)</u>	<u>(108,800)</u>
	<u>111,000</u>	<u>133,000</u>	<u>146,000</u>	<u>390,000</u>

b) Variances

b) i) Material price variance

Material	Standard price	Actual price	Variance	Actual quantity	Total variance (sh).
X	10	10.20	-0.20	165,000	33,000A
Y	15	15.10	-0.10	238,000	<u>23,800A</u>
					<u>56,800A</u>

ii) Material usage variance

Material	Actual quantity(kgs)	Standard quantity	Variance	Standard price	Total variance
X	165,000	40,000×4=160,000	(5000)	10	(50,000)
Y	238,000	40000×6=240,000	2000	15	<u>30,000</u>
					<u>20,000A</u>

iii) Direct labour rate variance

$$\text{Direct labour rate variance} = (\text{Standard rate} - \text{Actual rate}) \times \text{Actual hours worked}$$

$$= (40 - 41) 32,000$$

$$= \text{sh. } 320,000 \text{A}$$

$$\text{Units to be produced first quarter} = 9700 + 12400 + 14200 = 36,300$$

$$\text{Direct labour hours first quarter} = 36,300 \times \frac{3}{4} = 27,225 \text{ hours}$$

$$\text{Standard rate per hour} = \frac{\text{budgeted direct labour cost}}{\text{Budgeted hours}}$$

$$= \frac{1,089,000}{27,225}$$

$$= \text{sh. } 40 \text{ per hour}$$

$$\text{Actual labour rate per hour} = \frac{1,312,000}{32,000}$$

$$= \text{sh. } 41 \text{ per hour}$$

iv) Direct labour efficiency variance

Standard hours for actual production

$$= \text{Actual units produced} \times \text{Standard hours per unit produced}$$

$$= 40,000 \times \frac{3}{4} = 30,000 \text{ hours}$$

$$\text{Direct labour efficiency variance} = (\text{standard hours} - \text{actual hours}) \text{ standard rate}$$

$$= (30,000 - 32,000) 40 = \text{sh. } 80,000 \text{A}$$

QUESTION 25

May 2016 Question Four

Mark Ltd. operates a budgetary control system. The following is the company's income forecast for the four months period ending 31 August 2016:

	2016			
	May	June	July	August
	Sh. "000"	Sh. "000"	Sh. "000"	Sh. "000"
Sales	45,000	55,000	75,000	50,000
Cost of sales	(21,000)	(28,000)	(42,000)	(22,000)
Gross margin	24,000	27,000	33,000	28,000
Selling and administration expenses:				
Selling expenses	7,000	8,400	11,200	7,300
Administration expenses	5,500	5,900	6,900	5,200
Total selling & administration expenses	12,500	14,300	18,100	12,500
Net operating income	11,500	12,700	14,900	15,500

Additional information:

- Administration expenses include depreciation of Sh. 1,800,000 each month.
- 20% of the sales are on cash basis.
- Credit sales are collected over a 3-month period with 20% collected in the month of sale, 65% in the month following the month of sale and 15% in the second month following sale.
- Sales for the months of March 2016 and April 2016 totaled Sh.27 million and Sh.33 million respectively. -

5. Inventor purchases are paid for within 15 days. Therefore, 50% of a month's inventory purchases are paid for in the month of purchase and the remaining 50% paid for in the following month. Accounts payable for inventory purchases as at 30 April 2016 totaled Sh. 11.1 million.
6. The company maintains its ending inventory levels-at 25% of the cost of the merchandise to be sold in the following month. The merchandise inventory as at 30 April 2016 amounted to Sh.5.25 million.
7. Land costing Sh.4.3 million will be purchased in May 2016.
8. Dividends of Sh.1.3 million will be declared and paid in July 2016.
9. The cash balance on 30 April 2016 amounted to Sh.8.4 million and the company must maintain a cash balance of at least this amount at the end of each month. In case of any deficit, a bank overdraft is obtained.

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Required:

For the three months ending 31 July 2016 prepare:

- | | |
|----------------------------------|-----------|
| (a) Debtors collection schedule. | (6 marks) |
| (b) Creditors payment schedule. | (6 marks) |
| (c) Cash budget. | (8 marks) |

ANSWER

(a) Debtors' collection schedule

Credit sales

Month	Apportioned “000”	Amount Sh “000”
March	$0.8 \times 27,000$	21,600
April	$0.8 \times 33,000$	26,400
May	$0.8 \times 45,000$	36,000
June	$0.8 \times 55,000$	44,000
July	$0.8 \times 75,000$	60,000

Debtors’ collection schedule

Month	Credit Sales Sh “000”	20%	65%	15%	Total Sh”000”
March	21,600	4,320	-	-	4,320
April	26,400	5,280	14,040	-	19,320
May	36,000	7,200	17,160	3,240	27,600
June	44,000	8,800	23,400	3,960	36,110
July	60,000	12,000	28,600	5,400	46,000

b) Creditors payment schedule

Month	Closing inventory “000”
May	$\frac{25}{100} \times 28,000 = 7,000$
June	$\frac{25}{100} \times 42,000 = 10,500$
July	$\frac{25}{100} \times 22,000 = 5,500$

Purchases = cost of sales + closing inventory – opening inventory

May purchases = 21,000 + 7,000 – 5,250 = 22,750

June purchases = 28,000 + 10,500 – 7,000 = 31,500

July purchases = 42,000 + 55 – 10,500 = 37,000

Creditors' payment schedule

Month	Purchases “000”	5%	50%	Total “000”
May	22,750	11,375	11,100	22,475
June	31,500	15,750	11,375	21,125
July	37,000	18,500	15,750	34,250

c) Cash budget

	May	June	July
	Sh.”000”	Sh “000”	Sh “000”
Balb/f	8,400		
Cash sales	9,000	11,000	15,000
Debtors collection	27,600	36,160	46,000
Bank overdraft	875	-	-
Total	<u>45,875</u>		
Less: payments			
Admin cost	3,700	4,100	5,100
Selling expenses	7,000	8,400	11,200
Land	4,300	—	—
dividends	-	-	1,300
Suppliers-payment	22,475	27,125	34,250
Bank overdraft repayment	-	875	-

Total	37,475	40,500	51,850
	8,400	15,060	24,210

QUESTION 26

May 2016 Question Five B

Describe three factors to be considered by an organisation when undertaking performance measurements. (6 marks)

ANSWER

Factors to be considered by an organization when undertaking performance measurement

- **Measurement needs responses:** managers should only respond to measures that they find useful.
- **Relevance of measurement:** this includes finding out what the company does and how it does so that measures reflect actually what occurs.
- **Measurement needs:** the cost and benefits of providing resources to produce a performance indicator must be carefully weighed up. Performance must be measured in relation to something otherwise it becomes meaningless. Overall performance should be measured against the objective of the organization and success factors must be identified.

QUESTION 27

November 2015 Question One B

Highlight four purposes of performance measurements.

(4 marks)

ANSWER

Purposes of performance measurement:-

- Helps to assess whether the firm is achieving its goals.
- Support budgetary planning and resource allocation processes.
- Helps organizations learn how to accomplish goals more effectively.
- Helps monitor the operation of programs and to make continuous improvements
- Helps communicate the priorities of the organization.
- Helps clarify organization goals, direction and expectation

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QUESTION 28

November 2015 Question Two A

Describe four advantages of budgetary control in an organization.

(8 marks)

ANSWER

Advantages of budgetary controlling an organization

Budgetary control is the process by which financial control is exercised within an organization. It has the following advantages:-

- Budgets provide a tool for corrective action through reallocations.
- Budgets improve resource allocation, because all request are clarified and justified
- Budgets improve communication with employees
- Budgets provide an excellent record of organization activities
- It helps coordinate activities across departments.
- Budgets translate strategic plans to action. They specify the resources, revenues and activities required to carry out the strategic plan for the coming year
- Transfer of authority to individual managers for decisions
- Establishes a system of control if plans are reviewed regularly against actual
- Planning ahead gives time to take corrective action
- Motivation of managers through the use of clearly defined objectives and monitoring of achievement
- Responsibility accounting: information is provided to managers responsible for revenue and expenditure
- Maximization of profits

QUESTION 29

Pilot paper 2015 Question Two A

Explain six requirements of an effective budgetary control system. (6 marks)

ANSWER

Requirements of an effective budgeting control system.

- i. Feedback system for the purpose of evaluating performances and ensuring standards are up to date
- ii. Flexibility to changes in activity level
- iii. A cost analysis tool on departmental basis to enable cost analysis level
- iv. It should have mechanism to accommodate participation so that views from all stakeholders are taken into consideration when evaluating budgeting processes

QUESTION 30

Pilot paper 2015 Question Four A

Alpha Limited manufactures three products in two production departments; machining and finishing. It also has two service departments, a canteen and machine maintenance departments. The following are the budgeted cost data for the coming year:

Department	Machining	Finishing	Canteen	Maintenance
Allocated overheads (Sh.)	3,502,000	1,748,000	800,000	400,000
No. of employees	15	9	2	6
Maintenance orders	52	13		
Products	Benta	Centa	Denta	
Production (units)	3000	4500	2000	
Direct material cost per unit (Sh.)	120	150	170	

Direct labour hours per unit:

Machining (Sh.60 per hour)	3	2	1.5
Finishing (Sh.50 per hour)	4	2	2

Machine hour per unit:

Machining	2	4	3
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Overheads are absorbed on machine hours in machining and labour hour in finishing.

Required:

Calculate the budgeted cost per unit for each product. (14 marks)

ANSWER

Budgeted cost per unit for each product.

	Machining	Finishing	Canteen	Maintenance
	Sh.	Sh.	Sh.	Sh.
Allocated overhead	3,502,000	1,748,000	800,000	400,000
Canteen (15:9)	500,000	300,000	(800,000)	-
Maintenance(52:13)	<u>320,000</u>	<u>80,000</u>	<u>0</u>	<u>(400,000)</u>
	<u>4,322,000</u>	<u>2,128,000</u>	<u>=</u>	<u>=</u>

$$Q. A. R = \frac{\text{Budgeted Overhead}}{\text{Base}}$$

$$\text{Machining department} = \frac{\text{Budgeted Overhead}}{\text{Machine hours}}$$

$$= \frac{4,322,000}{(2 \times 3000) + (4 \times 4500) + (3 \times 2000)}$$

$$Q.A.R = \frac{4,322,000}{30,000} = sh. 144.06 \text{ per hour}$$

$$\text{Finishing department} = \frac{\text{Budgeted Overhead}}{\text{Labour hours}}$$

$$= \frac{2,128,000}{(2 + 4 \times 3000) + (2 + 2 \times 4500) + (1.5 + 2 \times 2000)}$$

$$= \frac{2,128,000}{21,000 + 18,000 + 7000}$$

$$Q.A.R = \frac{2,128,000}{46,000} sh. 46.26 \text{ per hour}$$

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	Benta	Centa	Denta
Direct materials	120×3000=360,000	150×4500=675,000	170×2000=340,000
Labour cost:			
Machining	3×3000×60=540,000	2×450×60=540,000	1.5×2000×60=180,000
Finishing	4×3000×50=600,000	2×4500×50=450,000	2×2000×50=200,000
Overhead:			
Machining	2×3000×144.06=864,360	4×4500×144.06=2,593,080	3×2000×144.06=864,360
Finishing	21000×46.26=971,460	18000×46.26=832,680	7000×46.26=323,820
Total cost	3,335,820	5,090,760	1,908,180

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Cost per unit	$\frac{3,335,820}{3,000}$	$\frac{5,090,760}{3,000}$	$\frac{1,908,180}{2,000}$
	= sh.1,111.94	= sh. 1,696.92	= sh.954.09

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TOPIC 10

STANDARD COSTING AND VARIANCE ANALYSIS

QUESTION 1

April 2024 Question Two A

Hawk Ltd. uses a standard absorption costing in its operations. The following information is provided by the cost accountant:

	Actual	Budgeted
Selling price per unit (Sh.)	2,600	3,100
Variable cost per unit (Sh.)	1,000	1,000
Output and sales (units)	8,200	8,700
Total fixed overheads (Sh.)	4,510,000	5,220,000

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Required:

- (i) Sales price variance. (2 marks)
- (ii) Sales volume profit variance. (2 marks)
- (iii) Fixed overhead volume variance. (2 marks)

ANSWER

- (i) Sales price variance.

$$SPV = \text{Actual sales} - \text{Standard sales for actual quantity}$$

$$= (AQ \times AP) - (AQ \times BP)$$

Where:

AQ = Actual quantity

AP = Actual price

BP = Budgeted price

Hence;

$$SPV = AQ (AP - BP)$$

$$AQ = 8200 \text{ units}$$

$$AP = \text{Sh. } 2600 \text{ per unit}$$

$$BP = \text{Sh. } 3100 \text{ per unit}$$

$$SPV = 8200(2600 - 3100)$$

$$= \text{sh. } 4,100,000$$

(ii) Sales volume profit variance.

$$SVPV = BM (AQ - BQ)$$

Or

$$= \text{sales volume variance (SVV)} \times \text{Budgeted profit ratio}$$

N/B

$$SVV = BP (AQ - BQ)$$

Where;

SVPV = Sales volume profit variance

SVV = Sales volume variance

BP = Budgeted price

BM = Budgeted Margin

AQ = Actual quantity

BQ = Budgeted quantity

BQ = 8700 units

AQ = 8200 units

BP = Sh. 2600 per unit

BM = Budgeted price (BP) – Standard cost (SC)

$$= 3100 - \left(1000 + \frac{5220000}{8700}\right)$$

$$= 3100 - 1600$$

$$= \text{Sh. } 1500 \text{ per unit}$$

Hence,

$$\text{SVPV} = 1500 (8200 - 8700)$$

$$= \text{Sh. } 750,000 \text{ A}$$

Alternatively;

$$\text{SVV} = \text{BP}(\text{AQ} - \text{BQ})$$

$$= 3100 (8200 - 8700)$$

$$= \text{Sh. } 1,550,000\text{A}$$

$$\text{Budgeted price profit ratio} = \frac{\text{Budgeted profit (margin)}}{\text{Budgeted price}}$$

$$= \frac{1500}{3100}$$

$$= 0.483871 \text{ Approx}$$

Hence;

$$\text{SVPV} = \text{SVV} \times \text{Budgeted profit ratio}$$

$$= 1550000 \times 0.483871$$

$$= \text{Sh. } 750,000 \text{ A}$$

(iii) Fixed overhead volume variance.

$$= \text{Standard fixed overhead rate permit}$$

$$\times (\text{Actual Quantity} - \text{Budgeted quantity})$$

$$\text{Fixed overhead rate per unit} = \frac{\text{Budgeted fixed overhead}}{\text{Budgeted output}}$$

$$= \frac{\text{Sh. } 5,220,000}{8700 \text{ units}}$$

$$= \text{Sh. } 600 \text{ per unit}$$

Hence;

$$\text{FOVV} = 600(8200 - 8700)$$

= Sh. 300,000 F

Alternatively;

FOVV = (Absorbed Fixed overheads for actual quantity – Budgeted fixed overheads)

= $(600 \times 8200) - 5,220,000$

= Sh. 300,000 F

QUESTION 2

December 2023 Question Three B

Maono Ltd. has a budgetary activity level of 50,000 direct hours and budgeted production overheads of Sh.10,000,000. The following information was obtained from its three departments namely; A, B and C.

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1. **Department A:** 50,000 direct hours are worked and the actual overheads were Sh.9,400,000.
2. **Department B:** 43,000 direct hours are worked and the actual overheads were Sh.10,000,000.
3. **Department C:** 45,000 direct hours are worked and the actual overheads were Sh.9,600,000.

Required:

Determine over or under absorption of overheads of each department. (6 marks)

ANSWER

Determining the over or under absorption of overheads of each department

$$\begin{aligned}\text{Overhead absorption rate (OAR)} &= \frac{\text{Budgeted overheads}}{\text{Budgeted activity}} \\ &= \frac{\text{sh.10,000,000}}{50,000}\end{aligned}$$

= sh. 200 per hour.

Department	A	B	C
	Sh.	Sh.	Sh.
Absorbed overheads	(200 × 50,000)10,000,000	(200 × 43,000)8,600,000	(200 × 45,000)9,000,000
Less actual overheads	<u>9,400,000</u>	<u>10,000,000</u>	<u>9,600,000</u>
Over (under) absorption	<u>600,000</u>	<u>(1,400,000)</u>	<u>(600,000)</u>

QUESTION 3

December 2023 Question Five C

ABC Ltd. produces and sells a single product Zed whose standard cost is as follows:

	Sh.
Direct material (15kgs at Sh.260 per kg)	3,900
Direct wages (5 hours at Sh.60 per hour)	300
Fixed production overheads	<u>500</u>
	<u>4,700</u>

Additional information:

- The fixed overheads included in the standard cost is based on an expected monthly output of 1,000 units.
- Fixed production overheads are absorbed on the basis of direct labour hours.

3. During the month of November 2023, the actual results were as follows:

Production	890 units
Material	12,100 units costing Sh.1,835,500
Direct wages	4,200 hours worked for Sh.241,500
Fixed production overheads	Sh.470,000

Required:

- (i) Material price variance and material wage variance. (4 marks)
- (ii) Labour rate variance and labour efficiency variance. (4 marks)

ANSWER

- (i) **Material price variance and material wage variance.**

Material price variance (MPV)

$$\begin{aligned}\text{MPV} &= [\text{Actual qty (AQ)} \times \text{Actual price (AP)}] - [\text{Actual qty (AQ)} \times \\ &\quad \text{std. price (SP)}] \\ &= (AQ \times AP) - (AQ \times SP) \\ &= AQ (AP - SP) \\ \text{MPV} &= 1,835,500 - (12100 \times 260) \\ &= 1,835,500 - 3,146,000 \\ &= \text{sh. 1,310,500 F}\end{aligned}$$

Material usage variance (MUV)

$$\text{MUV} = [\text{Actual qty (AQ)} \times \text{Std. price (SP)}] - [\text{Std. qty (SQ)} \times \text{std. price (SP)}]$$

$$= SP(AQ - SQ)$$

$$SP = \text{sh. 260 per kg}$$

$$AQ = 12,100 \text{ kg}$$

$$SQ = 890 \text{ units} \times 15 \text{ kgs@ unit} = 13,350 \text{ kg.}$$

$$MUV = (12,100 - 13,350) \times 260$$

$$= \text{sh. 325,000}$$

(ii) Labour rate variance and labour efficiency variance

Labour rate variance (LRV)

$$LRV = [Actual \text{ hours } (AH) \times Actual \text{ rate } (AR)] - [Actual \text{ hrs } (AH) \times std. \text{ rate } (SR)]$$

$$= (AH \times AR) - (AH \times SR)$$

$$= AH (AR - SR)$$

$$AH = 4200 \text{ hours}$$

$$AR = \text{sh. } \frac{241500}{4200 \text{ hrs}} = \text{sh. 57.5@hour}$$

$$SR = \text{sh. 60@hour}$$

$$LRV = 4200(57.5 - 60)$$

$$= \text{sh. 10500F}$$

Labour Efficiency variance (LEV)

$$LEV = [Actual \text{ hours } (AH) \times Standard \text{ rate } (SR)] - [Std. \text{ hrs } (SH) \times std. \text{ rate } (SR)]$$

$$= (AH \times SR) - (SH \times SR)$$

$$= SR (AH - SH)$$

$$SR = \text{sh. } 60 @ \text{hour}$$

$$AH = 4200 \text{ hours}$$

$$SH = 890 \text{ units} \times 5 \text{ hours} @ \text{unit}$$

$$= 4450 \text{ hours}$$

Actual production

$$LEV = 60(4200 - 4450)$$

$$= \text{sh. } 15000\text{F}$$

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QUESTION 4

August 2023 Question Three B

Sigma Ltd. operates a standard marginal costing system. The following data has been collected for the month of July 2023 for its main product branded —SM”:

Actual costs incurred:	Sh. “000”
Direct material (1,188 kilograms)	11,286
Direct labour (5,760 hours)	41,760
Variable production overheads	12,096
Fixed production overheads	48,600
Variances:	Sh. “000”

Direct material price variance	594 Favourable
Direct material usage variance	1,080 Adverse
Direct labour rate variance	1,440 Adverse
Direct labour efficiency variance	2,520 Adverse
Variable overhead expenditure variance	576 Adverse
Variable overhead efficiency variance	720 Adverse
Fixed overhead expenditure variance	900 Favourable
Fixed overhead volume variance	4,500 Favourable

Additional information:

1. Variable production overheads are absorbed based on actual hours worked.
2. There was no significant difference in opening and closing work in progress.
3. Actual production of product SGM was 1,080 units in the month of July 2023.

Required:

Prepare a standard product cost sheet for one unit of product SGM. (8 marks)

ANSWER

Product cost sheet for one unit of product SGM

Basic Workings (w)

1. Direct materials:

Actual cost = 11,286 (sh. -000")

Actual quantity. (AQ) = 1,188 kgs

$$\text{Actual price (AP)} = \frac{\text{sh.}11286000}{1188 \text{ kg}} = \text{sh. } 9500 @ \text{kg}$$

$$\text{Standard cost} = \text{Actual cost} \pm \text{variance}$$

$$= 11286 - 1080A + 594F$$

$$= 10800 (\text{sh. } 000')$$

$$\text{Standard cost per unit} = \frac{\text{sh.}10,800,000}{1080 \text{ units}} = \text{sh. } 10,000 \text{ per unit}$$

$$\text{Material price variance (MPV)} = \text{Actual quantity (AQ)} [\text{Actual price (AP)} - \text{std. price (SP)}]$$

$$594F (\text{sh.}000) = 1188 (9500 - \text{sp})$$

$$\text{SP} = \frac{11286000 + 594000F}{1188 \text{ kg}}$$

$$= \text{sh.}10,000 @ \text{kg}$$

$$\text{Material usage variance (MUV)} = \text{SP (AQ} - \text{SQ)}$$

$$1080A (\text{sh.}000) = 10,000 (1188 - \text{SQ})$$

$$\text{SQ} = \frac{1188000 - 1080000}{10000}$$

$$= 1080 \text{ kgs}$$

$$\text{SQ per unit} = \frac{1080 \text{ kgs}}{1080 \text{ units}}$$

$$= 1 \text{ kg per unit}$$

2. Direct labour

$$\text{Actual cost} = 41760 (\text{sh.}000)$$

$$\text{Actual hours (AH)} = 5760$$

$$\text{Actual Rate (AR)} = \frac{\text{sh.}41,760,000}{5760} = \text{sh. } 7250 @ \text{ hour}$$

Standard cost = Actual cost $\pm$ Variance

$$= 41760 - 1440A - 2520A$$

$$= 37800 \text{ (sh.000)}$$

$$\text{Std. cost per unit} = \frac{\text{sh.}37,800,000}{1080} = \text{sh. } 35,000 @ \text{unit}$$

Labour Rate variance (LRV) = AH (AR – SR)

$$1440A(\text{sh.000}) = 5760(7250 - \text{SR})$$

$$\text{SR} = \frac{41760000 - 1440000A}{5760}$$

$$= \text{sh. } 7,000 @ \text{hour}$$

Labour Efficiency Variance (LEV) = SR (AH – SH)

$$2520A(\text{sh.000}) = 7000(5760 - \text{SH})$$

$$\text{SH} = \frac{40,320,000 - 2,520,000A}{7000}$$

$$= 5400 \text{ hours}$$

$$\text{SH per unit} = \frac{5400 \text{ hours}}{1080 \text{ units}}$$

$$= \mathbf{5 \text{ hours per unit}}$$

3. Fixed production overheads

Actual = 48600 (sh. 000)

Standard = Actual $\pm$ variance

$$= 48600 + 900F + 4500F$$

$$= 54000 \text{ (sh.000)}$$

$$\text{Std. cost per unit} = \frac{\text{sh.54,000,000}}{1080}$$

$$= \text{sh. 50,000}$$

4. Variable Production Overheads

$$\text{Actual} = 12096 \text{ (sh.000)}$$

$$\text{Standard} = \text{Actual} \pm \text{variance}$$

$$= 12096 - 576A - 720A$$

$$= 10800 \text{ (sh.000)}$$

$$\text{Std. variable OHS per unit} = \frac{\text{sh.10,800,000}}{1080} = \text{sh.10,000@unit}$$

Variable overhead Expenditure variance = Actual OHS – Standard OHS on actual hours worked

$$576A \text{ (sh.000)} = 12096 - (AH \times SR)$$

$$= 12096 - (5760 \times SR)$$

$$SR = \frac{12096000 - 576000A}{5760 \text{ hours}} = \text{sh. 200@hour}$$

Sigma Ltd.

Standard product cost sheet for one unit of production SGM

	Sh.
Direct material:	
1kg, @ sh.10,000 per kg	10,000

Direct labour:	
5 hours, @ sh. 7000 per hour	<u>35,000</u>
	45,000
Variable production overheads:	
5 hours, @ sh. 2000 per hour	<u>10,000</u>
Marginal production cost per unit	55,000
Fixed production overheads	<u>50,000</u>
Standard production cost per unit	<u>105,000</u>

QUESTION 5

April 2023 Question Five B

Dex Ltd. manufactures a single product branded —XV—. The company operates a standard marginal costing system.

The following information for the month of March 2023 is availed to you:

1. The budgeted production and sales for the month amounted to 6,000 units.
2. The standard selling price of product “XV” per unit is Sh.13,200.
3. The variable standard manufacturing costs per unit are as follows:

	Sh.
Direct materials (2.5 kgs at Sh.1,690 per kg)	4,225
Direct labour (1.25 hours at Sh.1,880 per hour)	2,350
Variable production overhead (1.25 direct labour hours at Sh.1,340 per hour)	1,675

4. The actual results for the month of March 2023 were as follows:

Production in units	6,380
---------------------	-------

	Sh.“000”
Sales (5,640 units)	81,075
Direct materials purchased and used (14,730 kgs)	27,987
Direct labour (8,535 hours)	15,363
Variable production overheads	8,974

5. The variable production overheads are absorbed on the basis of direct labour hours.
6. The opening and closing inventories of finished goods are valued at the standard variable manufacturing cost per unit.

Required:

Compute the following variances:

- | | |
|---------------------------------|-----------|
| (i) Sales price. | (2 marks) |
| (ii) Sales volume contribution. | (2 marks) |
| (iii) Direct material price. | (2 marks) |
| (iv) Direct material usage. | (2 marks) |
| (v) Direct labour rate. | (2 marks) |
| (vi) Direct labour efficiency. | (2 marks) |

ANSWER

- (i) Sales price.

Actual price (AP) = Budgeted price (BP) Actual quantity (AQ)

BP = 13,200

$$AP = \frac{\text{Actual sale}}{\text{Actual Quantity}}$$

$$= \frac{81,075,000}{5,640} = 14,375$$

$$\begin{aligned}\text{Sales price variance} &= (14,375 - 13,200) 5,640 \\ &= 6,627,000\text{F}\end{aligned}$$

(ii) Sales volume contribution.

[*Actual Quantity (AQ)* – *budgeted Quantity(BQ)*] Budgeted contribution per unit (BC)

$$AQ = 5,640$$

$$BQ = 6,000$$

$$\begin{aligned}BC &= 13,200 - (4,225 + 2,350 + 1,675) \\ &= 4,750\end{aligned}$$

Sales volume contribution variance

$$\begin{aligned}(5,640 - 6,000) 4,750 \\ = 1,710,000\text{A}\end{aligned}$$

(iii) Direct material price.

Actual quantity (Standard price – Actual price)

$$\begin{aligned}&= 14,730 \left(1,690 - \frac{27,987,000}{14,730}\right) \\ &= 3,093,300\text{A}\end{aligned}$$

(iv) Direct material usage.

(Standard quantity – actual quantity) standard price

$$\text{Standard quantity} = 5,640 \times 2.5 = 14,100$$

Material usage variance

$$= (14,100 - 14,730)1,690$$

$$= 1,064,700A$$

(v) Direct labour rate.

(Standard rate – Actual rate)Actual hours

$$\text{Actual rate} = \frac{15,363,000}{8,535} = 1,800$$

$$\text{Labour rate variance} = (1,800 - 1,880)8,535$$

$$= 682,800A$$

(vi) Direct labour efficiency.

(Standard hours – Actual hours) Standard rate

$$\text{Standard hours of actual production} = 1.25 \times 5,640$$

$$= 7,050$$

Labour rate variance:

$$(7,050 - 8,535)1,800$$

$$= 2,673,000A$$

QUESTION 6

December 2022 Question Four (b)

Quota Ltd manufactures and sells a single product branded –TT” with a standard cost of Sh.1,100 made up as follows:

	Sh.
Direct materials (15 square metres at Sh.30 per square metre)	450
Direct labour (5 hours at Sh.100 per hour)	500
Variable overheads (5 hours at Sh.20 per hour)	100
Fixed overheads (5 hours at Sh.10 per hour)	50

The standard selling price per unit is Sh.1,300. The monthly budget projects production and sales of 1,000 units.

Actual figures for the month of November 2022 are as follows:

- Sales 1,200 units at Sh.1,320 per unit.
- Actual production 1,400 units.
- Direct materials 22,000 square metres at Sh.40 per square metre.
- Direct wages 6,800 hours at Sh.110.
- Variable overheads was Sh.110,000.
- Fixed overheads was Sh.60,000.

Required:

- (i) Material price variance and material usage variance. (4 marks)
- (ii) Labour rate variance and labour efficiency variance. (4 marks)
- (iii) Fixed overhead capacity variance and fixed overhead efficiency variance. (4 marks)

ANSWER

(i) Material price variance and material usage variance.

Material price variance (MPV)

$$\text{MPV} = \text{AQ}(\text{SP} - \text{AP})$$

Where: AQ = actual quantity of materials used

SP = Standard price per unit of materials used

AP = Actual price per unit of materials used

$$\text{AQ} = 22000m^2$$

$$\text{SP} = \text{Sh.}30@m^2$$

$$\text{AP} = \text{Sh.}40@m^2$$

$$\text{Hence, MPV} = 22000(30 - 40)$$

$$= \text{Sh.}220\,000 \text{ A}$$

Material usage variance (MUV)

$$\text{MUV} = \text{SP}(\text{AQ} - \text{SQ})$$

$$\text{SQ} = 15 \times 1000 = 15\,000m^2$$

$$\text{Hence, MUV} = 30(22000 - 15000)$$

$$= \text{Sh.}210\,000 \text{ A}$$

(ii) Labour rate variance and labour efficiency variance.

Labor rate variance (LRV)

$$\text{LRV} = \text{AH}(\text{SR} - \text{AR})$$

Where: AH = Actual hours of production

SR = Standard rate per hour

AR = Actual rate per hour

AH = 6800 hours

SR = Sh.100@hour

AR = Sh.110@hour

Hence, LRV = $6800(100 - 110)$

= Sh.68 000 A

Labour efficiency variance (LEV)

LEV = $SR(SH - AHW)$

Where: AHW = Actual hours worked (excluding idle time)

SR = Sh.100@hour

SH = 5 hours @ unit $\times$ 1000 units = 5000 hours

AHW = 6800 hours

Hence, LEV = $100(5000 - 6800)$

= Sh.180 000 A

(iii) Fixed overhead capacity variance and fixed overhead efficiency variance.

Fixed overhead capacity variance (FOCV)

FOCV = $SR(SQ - BQ)$

Where: SR = standard rate of fixed overheads per unit

SQ = Standard quantity of production for the actual hours

BQ = Budgeted production quantity

SR = Sh.50 per unit

BQ = 1000 units

$$SQ = \frac{6800 \text{ hrs} \times 1000 \text{ units}}{5000 \text{ hrs}} = 1360 \text{ units}$$

Alternatively:

$$SQ = \frac{6800 \text{ hrs}}{5 \text{ hrs@ unit}} = 1360 \text{ units}$$

Hence; FOCV = 50(1360 – 1000) = Sh.18 000 F

Fixed overhead efficiency variance (FOEV)

$$FOEV = SR(SQ - AQ)$$

AQ = 1400 units

Hence: FOEV = 50(1360 – 1400)

$$= \text{Sh.2000 F}$$

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QUESTION 7

August 2022 Question Five (b)

The following information relates to actual output costs and variances for the month of

May 2022 for a single product branded “T” manufactured by KK Ltd.:

Actual production	36,000 units
Actual cost incurred:	Sh.

Direct material (300,000 kgs)	8,400,000
Direct labour (64,000 hours)	5,440,000
Variable production overheads	1,520,000

Variances

Direct materials price	300,000 (Favourable)
Direct materials usage	180,000 (Adverse)
Direct labour rate	160,000 (Adverse)
Direct labour efficiency	320,000 (Favourable)
Variable production overhead expenditure	120,000 (Adverse)
Variable production overhead efficiency	80,000 (Favourable)

Additional information:

1. There was no opening or closing work-in-progress during the period.
2. Variable production overhead varies with labour hours worked.
3. The company operates the standard marginal costing system.

Required:

Standard cost card for product —T for the month of May 2022. (12 marks)

ANSWER

W1 standard cost of direct materials

	Sh.
Direct material used	8,400,000
Add material price variation (F)	300,000

	8,700,000
Less material usage variance (A)	180,000
Standard cost of Direct materials	8,520,000

$$\text{Standard cost per unit} = \frac{\text{sh.8520000}}{36000 \text{ units}}$$

$$= \text{sh.236.67}$$

W2 standard cost of direct labour

	Sh.
Direct material spent	5,440,000
Add direct labour efficiency variance (F)	320,000
	5,760,000
Less direct labour rate variance (A)	<u>160,000</u>
Standard cost of Direct labour	<u>5,600,000</u>

$$\text{Standard cost per unit} = \frac{\text{sh.5,600,000}}{36000 \text{ units}}$$

$$= \text{sh.155.56}$$

W3 standard cost of variable production overheads

	Sh.
Variable production overhead incurred	1,520,000
Add variable overhead efficiency variance (F)	<u>80,000</u>
	1,600,000
Less variable overhead expenditure variance(A)	120,000
Standard cost of variable production overheads	1,480,000

$$\text{Standard cost per unit} = \frac{\text{sh.1,480,000}}{36000 \text{ units}}$$
$$= \text{sh.41.11}$$

Standard cost card for product “T” For the month of May 2022

	Sh.
Direct material	236.67
Direct labour	155.56
Prime cost	392.23
Variable production overhead	41.11
Standard marginal production cost	433.34

QUESTION 8

December 2021 Question Five (b)

Highlight four purposes of standard costing.

(4 marks)

ANSWER

- To set guidelines for each sort of cost.
- Help to give direction to further developing effectiveness.
- Serve as the central control point to provide inputs and feedback.
- Assist with motivating workers by issuing test targets
- To establish a routine of reporting to the management.

QUESTION 9

November 2020 Question Four

Zaidi Merchants is a newly established manufacturing enterprise that uses standard costing in its operations. The firm manufactures a product branded "MX" which has a standard selling price of Sh.120 per unit. Inventory is valued at standard cost.

The standard variable cost of one unit of MX is as follows:

	Sh.
Direct materials	20
Direct labour (6 hours at Sh.8 per hour)	48
Production overhead	<u>24</u>
Total	<u>92</u>

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Additional information:

1. The budgeted and actual activity levels for the month of April 2020 were as follows:

	Budgeted units	Actual units
Sales	25,000	25,000
Production	25,000	26,000

2. The actual sales and variable costs for the month of April 2020 were as follows:

Sh.

Sales	2,995,000
Direct materials (purchased and used)	532,800
Direct labour (150,000 hours)	1,221,000
Variable production overhead	614,000

Required:

- a) Calculate the following cost variances for the month of April 2020:
- (i) Total direct materials cost variance. (2 marks)
 - (ii) Total variable production overheads variance. (2 marks)
 - (iii) Direct labour rate variance. (2 marks)
 - (iv) Direct labour efficiency variance. (2 marks)
- b) A reconciliation statement between actual and budgeted profit or loss for the month of April 2020. (8 marks)
- c) Explain two factors to be taken into account in deciding whether or not to investigate individual variances. (4 marks)

ANSWER

Zaidi merchants

- a) Cost variances for the month of April 2020

- (i) Total direct materials cost variance

$$= 532,800 - (20 \times 26,000)$$

$$= 532,800 - 520,000$$

$$= \text{Ksh } 12,800 \text{ Adverse}$$

(ii) Total variable production overheads variance

Variable overhead efficiency variable = standard overhead rate per hour

(AH – SH)

$$\text{Standard rate} = (24 \times 25,000) \div (6 \times 25,000)$$

$$= \text{Sh. } 4$$

$$\text{Variable overhead efficiency variance} = 4 (150,000 - 156,000)$$

$$= \text{Sh } 24,000 \text{ F}$$

Variable overhead expenditure variable = actual variable overheads –

(Actual hours × standard overhead rate / hour)

$$= 614,000 - (150,000 \times 4) = 14,000A$$

Total variable production overheads variance = 24,000F + 14,000A =

$$10,000F$$

(iii) Direct labour rate variance

$$\text{DLRV} = \text{AH} (\text{AR} - \text{SR})$$

Where:

AH = Actual hours = 150,000

AR = Actual rate = 1,221,000 ÷ 150,000 = Sh 8.14

SR = Standard rate = Sh 8

$$\text{DLRV} = 150,000 (8.14 - 8)$$

$$= \text{Sh } 21,000 \text{ Adverse}$$

(iv) Direct labour efficiency variance

$$\text{DLEV} = \text{SR}(\text{AH} - \text{SH})$$

Where:

$$\text{SH} = \text{is the hours} = 26,000 \times 6$$

$$= 156,000 \text{ hours}$$

$$= 8 (150,000 - 156,000)$$

$$= \text{Sh. } 48,000 \text{ Favourable}$$

b) A reconciliation statement between actual and budgeted profit or loss for the month of April

Budgeted contribution per unit = selling price per unit – standard variable cost per unit

$$= 120 - 92 = \text{Sh. } 28 \text{ per unit}$$

$$\text{Actual selling price} = \frac{\text{Actual sales made}}{\text{Actual units sold}} = \frac{2,995,000}{25,000} = 119.80$$

Sales price variance = Actual units sold (Actual price – Standard price)

$$= 25,000 (119.80 - 120)$$

$$\text{Sh } 5,000 \text{ Adverse}$$

Zaidi merchants budgeted income statement for April 2020

	Sh	Sh
Sales (25,000 × 120)		3,000,000
Less:		
Direct materials (26,000 × 20)	520,000	
Direct labour (26,000 × 48)	1,248,000	
Production overhead (26,000 × 24)	<u>624,000</u>	<u>(2,392,000)</u>
Budgeted contribution		<u>608,000</u>

Zaidi merchants actual income statement for April 2020

	Sh	Sh
Sales		2,995,000
Less:		
Direct materials	532,000	
Direct labour	1,221,000	
Variable production overheads	<u>614,000</u>	<u>(2,367,800)</u>
		<u>627,200</u>

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Sales variance

$$3,000,000 \text{ (budgeted)} - 2,995,000 \text{ (actual)} = 5,000A$$

Zaidi merchants

Reconciliation statement between actual and budgeted profit/loss

	Variance		Sh
Budgeted profit/loss			608,000
	F	A	

Sales variance		5,000	
Direct material cost variance		12,800	
Direct labour rate variance		21,000	
Direct labour efficiency variance	48,000		
Variable production overheads variance	<u>10,000</u>	—	
	58,000	38,800	19,200
Actual profit			627,200

c) Factors to be taken into accounting deciding whether or not to investigate individual variances

1. **Materiality:** The size of the variance may indicate the scale of the problem and the potential benefits arising from its correction
2. **Costs and benefits of correction:** If the cost of correcting the problem is likely to be higher than the benefit, then there is little point in investing further.
3. **Controllability / probability of correction:** If a cost or revenue is outside the managers control (such as the world market price of a raw material) then there is little point in investigating its cause
4. **Trends in variances:** One adverse variance may be caused by a random event. A series of adverse variances usually indicates that a process is out of control.
5. **Adverse or favourable variances:** Adverse variances tend to attract most attention as they indicate problems.

6. **The inherent variability of the cost or revenue:** Some costs e.g oil prices are volatile and thus variances would therefore not be surprising other costs, by nature , are far more stable and even a small variance may indicate a problem e.g labour rates

QUESTION 10

November 2019 Question Two A

Explain three types of standards as used in standard costing. (6 marks)

ANSWER

Types of standards in standard costing

- i. **Ideas standards** – are the minimum that are possible under most efficient operating conditions. i.e. wastage idle time etc. they allow for no work interruption and call for a level of effort that can only be attained by most skilled workers working at 100% efficiency
- ii. **Attainable standards** - it is a standard that be attained if production is carried out efficiently machines are properly operates or materials are properly used. Under this standard allowance are made for normal spoilage, machine breakdown and lost time.
- iii. **Current standards** – this is the standard which set for use over a short period to reflect current conditions (current wastage and current inefficiencies)

- iv. **Basic standards** – they are long-term standards that remain unchanged over the years, their main purpose is to show trends over time for such items as material prices – labour rates efficiency etc.

QUESTION 11

May 2019 Question Five B

Biashara Ltd. uses standard costing. The following information relates to actual results for the period ended 30 April 2019:

Units produced	7,200
	Sh.
Materials used (420kgs)	8,450
Labour costs (9,100 hours)	35,280
Various overheads	34,200
Fixed costs	28,500
Direct material price variance	370 (favourable)
Direct material usage variance	252 (favourable)
Direct labour rate variance	1,120 (favourable)
Direct labour efficiency variance	1,040 (favourable)
Variable overhead expenditure variance	2,350 (adverse)
Variance overhead efficiency variance	910 (favourable)
Fixed overhead variance	500 (adverse)

Additional information:

1. The standard cost card and the budget for the period were misplaced and could not be recovered.
2. The accountant recalls that the budgeted output was 7,000 units.

Required:

Using variance analysis, derive the following:

- (i) Standard cost card for the period ended 30 April 2019. (5 marks)
- (ii) Budget for the period ended 30 April 2019. (5 marks)

ANSWER

i) Standard cost card for the period ended 30 April 2019

$$\text{Standard price per kg} = \frac{8,450 + 370}{420} = \text{Sh. 21 per kg}$$

$$\text{Standard usage per unit} = 21(420 - x) = 252$$

$$8,820 - 21x = 252$$

$$\frac{21x}{21} = 8,568$$

$$x = 408 \text{ kgs}$$

$$\text{Standard usage per unit produced in kgs} = 408 \div 7,200 = 0.057 \text{ kgs}$$

$$\text{Direct labour rate variance} = (\text{Actual rate} - \text{standard rate}) \text{ Actual hours}$$

$$-1120 = \left(\frac{35,280}{9,100} \times SR \right) 9,100$$

$$-1120 = (3.877 - SR) 100$$

$$-1120 = 35,280 - 9,100SR$$

$$\frac{9,100SR}{9,100} = \frac{36,400}{9,100}$$

$$SR = \text{Sh. } 4,700$$

Direct labour efficiency variance

$$LEV = \text{Standard rate (Actual hours - standard hours)}$$

$$-1,040 = 4,000(9,100 - sh)$$

$$-1,040 = 36,400 - 4,000Sh$$

$$\frac{4,000 Sh}{4,000} = \frac{37,440}{4,000} = Sh$$

$$\text{Standard hours} = 9,360 \text{ hours}$$

$$\text{Standard labour hours per unit produced} = 9360 \div 720 = 1300 \text{ hours per unit}$$

Variable overhead efficiency variance (V.O.E.V)

$$V.O.E.V = \text{Standard variable overhead absorption}$$

Rate (Actual hours - standard hours)

$$9,100 = VOARC(9,100 - 9,360)$$

$$910F = 260,000 VOAR$$

$$\text{Standard rate Sh. } 3,500$$

Biashara Ltd

Standard cost card for the period ended 30 April 2019

Standard cost per unit	Sh.
Direct materials : 0.57 kg at Sh 21 per kg	1.197

Direct labour 300 hours at Sh 4,000 per hour	<u>5.200</u>
Prime cost	6.797
Variable overheads 1300 hours at 3,500	<u>4,550</u>
	<u>10,947</u>

ii) Budget for the period ended 30 April 2019

Biashara Ltd

Budget for period ended 30/04/2019

	Sh.
Direct materials $8,450+370+252$	9,072
Labour cost $35,280+1,120+1,040$	37,440
Variable overheads $34,200-2,350+910=$	<u>32,760</u>
Total variable cost	79,272
Fixed costs $28,500-500$	<u>28,000</u>
Total costs	<u>107,272</u>

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QUESTION 12

November 2018 Question Four A

Engtech Ltd. manufactures castings which are transferred to the machine shop of the same company at standard prices.

A standard costing system is applied. Basic standards in regard to materials stock are as follows:

1. Standard mixture: 70% Ingredient Y
30% Ingredient X
2. Standard prices: Ingredient X Sh.480 per kg.

Ingredient Y Sh.130 per kg.

3. Opening and closing stock of ingredients X and Y for the month of October 2018 are as follows:

Opening stock: Ingredient X 100 kgs

Ingredient Y 60 kgs

Closing stock: Ingredient X 110 kgs

Ingredient Y 50 kgs

4. Total purchases for ingredients X and Y are as follows:

Ingredient X 300 kgs at Sh.146,500

Ingredient Y 100 kgs at Sh.12,500

5. The mixtures melted amounted to 400 kgs while castings produced were 375 kgs.
6. Standard loss is 10% of input.

Required:

- (i) Material price variances. (4 marks)
(ii) Material mix variances. (4 marks)
(iii) Material yield variances. (4 marks)

ANSWER

i) Material price variance

$$\text{Actual price per ingredient} = \frac{\text{Total purchase cost}}{\text{Material in kgs bought}}$$

$$\text{Actual price } x = \frac{146,500}{300} = \text{Sh. } 488.33$$

$$y = 12,500 \div 100 = \text{Sh. } 125.00$$

Material Price Variance (MPV) = (Price – Actual price) Actually quantity

$$MPV x = (480 - 488.33)300 = 2500A$$

$$MPV y = (130 - 125) 100 = 500F$$

Total material price variance = 2500A + 500F

$$= 200A$$

ii) Material mix variance

Material usage = Opening stock + Purchase – Closing stock

$$Material usage x = 100 + 300 - 110 = 290 \text{ kgs}$$

$$Material usage y = 60 + 100 - 50 = 110 \text{ kgs}$$

Standard mix

$$Material x = \frac{70}{100} \times 400 = 280 \text{ kgs}$$

$$Material y = \frac{30}{100} \times 400 = 120 \text{ kgs}$$

Ingredient	Actual quantity mix	Actual quantity actual mix	Variance (kgs)	S.P Per kg	Variance sh
x	280	290	(10)	480	(4,800)
y	120	110		130	<u>1,300</u>
					<u>(3,500)</u>

iii) Materials yield variance

= (standard quantity in standard mix – actual quantity in standard mix) standard price

Where standard quantity = 100 % input

90% of input = 375 kg of castings

$$100\% \text{ of input} = \frac{100}{30} \times 375 = 416.67 \approx 417 \text{ kgs}$$

Now standard quantity in standard mix

$$\text{Material x standard mix} = \frac{30}{100} \times 417 \text{ kg} = 125$$

$$\text{Material y standard mix} = \frac{70}{100} \times 417 \text{ kg} = 292 \text{ kg}$$

$$\text{Material yield variance x} = 480 (125 - 120) = \text{Sh. } 2400F$$

$$y = 130(292 - 280) = \text{Sh. } 156F$$

$$\text{Total material yield variance} = 2,400 + 1,560 = 3,960F$$

QUESTION 13

May 2018 Question Five C

The standard cost card for production of a component "Wye" is as follows:

Materials	1 kg at Sh.4 per kg per unit
Labour	25 hours (100 units) at Sh.8 per hour
Variable overheads	Sh.48,000 for budget period
Fixed overheads	Sh.120,000 for budget period
Output	24,000 units

Details for a production of 2,000 units are as follows:

Materials issued	2,000 kgs at Sh.3.50 per kg
Actual production	1,800 units
Actual wages	480 hours at Sh.8.50 per hour
Actual variable overheads	Sh.4,000
Actual fixed overheads	Sh.10,600

Required:

- (i) Materials usage variance. (3 marks)
- (ii) Labour rate variance. (3 marks)
- (iii) Variable overheads efficiency variance. (3 marks)
- (iv) Fixed overheads volume variance. (3 marks)

ANSWER

i) Material usage variance (MUV)

$$MUV = SP(SQ - AQ)$$

Where: $SP \rightarrow$ Standard price per kg = Sh. 4

$SQ \rightarrow$ Standard quality for actual output produced = $1800 \times 1 = 1800kg$

$$\therefore MUV = 4(1800 - 2000)$$

$$= 4(200)$$

$$= \text{Sh. 800 Adverse}$$

ii) Labour rate variance (LRV)

(AR) Actual rate = 8.50

Standard rate (SR) = 8

Actual hour (Ah) 480 hours

$$\begin{aligned} LRV &= (SR - AR) Ah \\ &= (8.00 - 8.50)480 \\ &= Sh. 240 A \end{aligned}$$

iii) Variable overhead efficiency variance (VOEV)

Variable overhead efficiency variance

= Variable overhead absorption rate (Standard hours – Actual hours)

$$VOEV = VOAR (SH - AH)$$

Where :

$$\begin{aligned} VOAR &= \frac{\text{Variable overhead cost budgeted}}{\text{Budgeted hours}} \\ &= \frac{48,000}{24,000 \times 0.25} = Sh. 8 \\ \therefore VOEV &= 8(1,800 \times 0.25) - 480 \\ &= 8(450 - 480) \\ &= Sh. 240 Adverse. \end{aligned}$$

Fixed overhead volume variance

Fixed overhead volume variance = Fixed overhead Absorption rate per hours (Budgeted hours – Standard hours for actual reduction) × Standard hours for actual production

$$= 0.25 \times 1,800 = 450 \text{ hours}$$

$$\text{Budgeted hours} = 0.25 \times 2000 = 500 \text{ hours}$$

$$\text{Fixed overhead absorption rate} = \frac{120,000}{24,000 \times 0.25} = Sh. 20 \text{ per hour}$$

$$\begin{aligned}\therefore \text{Fixed overhead volume variance} &= 20(500 - 450) \\ &= \text{Sh. } 1000 \text{ Adverse.}\end{aligned}$$

QUESTION 14

May 2017 Question Two

The following financial data relate to Chestar Manufacturing Ltd. for the year ended 31

March 2017:

	Sh.
Opening Stock:	
Finished goods (875 units)	74,375
Work-in-progress	32,000
Direct labour	450,000
Raw materials consumed	780,000
Factory overheads	300,000
Goodwill	100,000
Closing stock:	
Finished goods (375 units)	41,250
Work-in-progress	38,667
Sales (14,500 units)	2,080,000
Rent received from godowns	18,000
Interest received (net)	45,000
Selling and distribution overheads	61,000
Bad debts	12,000
Dividends paid	85,000
Administration overheads	295,000

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Additional information:

1. Factory overheads are absorbed at 60% of direct wages.
2. Administration overheads are recovered at 20% of factory cost.
3. Selling and distribution overheads are charged at Sh.4 per unit sold.
4. Opening stock of finished goods is valued at Sh.1 04 per unit.
5. The company values work-in-progress at factory cost for both financial and cost profit reporting.

Required:

- (a) Statements of income for the year ended 31 March 2017 showing profit as per financial records and as per costing records. (12 marks)
- (b) A statement reconciling the profit as per costing records with the profit as per financial records. (8 marks)

ANSWER

- (a) Statement of income for the year ended March 2017 showing profit as per financial records and as per costing records.

Profit as per as per costing records.

Income statement for the year ended 31 March 2017 as per as per costing records.		
Income statement	Sh.	Sh.
Raw material consumed		780,000
Direct labour		<u>450,000</u>
Prime cost		1,230,000

Factory overheads	(0.6×450,000)	<u>270,000</u>
Production cost		1,500,000
Add: opening WIP		32,000
Less: closing WIP		<u>(38,667)</u>
Cost of completed goods		<u>1,493,333</u>
Sales 14,500 units		2,080,000
Opening stock finished goods	74,375	
Add: cost of completed goods	1,493,333	
Less: closing stock finished goods	<u>(41,250)</u>	
Cost of sales		<u>1,526,458</u>
Gross profit		553,542
Administration overheads	(0.2×1,493,333)	(298,666.6)
Selling & distribution overheads	(14500×4)	(58,000)
Rent received from godowns		18,000
Interest received (net)		45,000
Bad debts.		(12,000)
Dividends paid		(85,000)
Goodwill impairment		<u>(100,000)</u>
		<u>62,875.40</u>

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Profit as per as per financial accounts

<u>Chestar manufacturing ltd profit as per financial accounts for year ended 31 march 2017</u>		
Income statement	Sh.	Sh.
Direct labour		4500,000
Raw material consumed		<u>780,000</u>
Prime cost		1230,000
Factory overheads		<u>300,000</u>

Production cost		1530,000
Add: opening WIP		(32,000)
Less: closing WIP		
Cost of completed goods		1,523,333
sales		2,080,000
Opening stock	74,375	
Add: cost of completed goods	1,523,333	
Less: closing stock	<u>(41,250)</u>	
Cost of sales		<u>(1,556,458)</u>
Gross profit		523,542
Rent received from godowns		18,000
Interest received (net)		45,000
		586,542
Other expenses		
Goodwill impairments	100,000	
Selling & distribution overheads	61,000	
Bad debts	12,000	
Dividends paid	85,000	
Administration overheads	<u>295,000</u>	<u>(553,000)</u>
Net profit		<u>33,542</u>

b). A statement reconciling the profit as per costing records with the profit as per financial records.

Reconciliation statement

	Sh.
Profit as per cost accounts	62875.40
Less: under recovered selling & distribution Overheads (61,000 – 58,000)	(3000.00)

<i>Add:</i> over recovered administration Overheads (298666.60-295,000)	3666.60
<i>Less:</i> under-recovered factory overheads(300,000 – 270,000)	<u>(30,000.00)</u>
	<u>33,542.0</u>

QUESTION 15

May 2017 Question Three A

Outline four causes of material usage variances.

(4 marks)

ANSWER

Causes of materials usage variance

- Defective materials
- Carelessness in the use or handling of materials
- Pilferage of raw materials
- Wastage due to inefficient production methods or unskilled employees

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QUESTION 16

November 2016 Question Two B

ALZ Ltd operates a standard overhead absorption costing system. The standard fixed overhead rate per hour is Sh.25.

The following data relate to the month of October 2016:

Actual hours worked

8,250

Budgeted hours	9,000
Standard hours of actual production	7,800
Actual fixed overheads expenditure (Sh.)	211,000

Required:

For the month of October 2016, compute:

- i. The fixed overheads volume variance. (2 marks)
- ii. The fixed overheads expenditure variance. (2 marks)

ANSWER

i) Fixed overheads volume variance

Fixed overheads volume variance = Fixed overhead rate per hour (budgeted hours – Standard hours)

$$= 25(9000 - 7800) = \text{Sh } 30,000 \text{ Adverse.}$$

ii) Fixed overheads expenditure variance

$$= \text{Actual fixed overhead cost} - (\text{budgeted hours} \times \text{fixed overhead rate})$$

$$= 211,000 - (25 \times 9000) = \text{Sh } 14,000 \text{ Favourable}$$

QUESTION 17

May 2016 Question Two A

Rivt Fries Enterprises. Ltd. manufactures food products. The details of the manufacturing cost of one of its products branded -Tams' is provided below:

Standard cost per unit:

Materials: 6 kilograms at Sh.480 per kilogramme

Labour: 4.8 hours at Sh.800 per hour.

Additional information:

1. The actual cost for the month of April 2016 was as follows:

Materials: 59,000 kilograms at Sh.500 per kilogramme

Labour: 47,500 hours at Sh.900 per hour

2. The actual production amounted to 10,000 units.
3. The variable production overheads are absorbed at 50% of the direct labour cost.

Required:

- (i) The material cost variance. (4 marks)
(ii) The labour cost variance. (4 marks)
(iii) Reconciliation of standard and actual costs in (a)(i) and (a)(ii) above. (4 marks)

ANSWER

The Material cost variance

Material price variance = (standard price – actual price) Actual quantity

$$= (480 - 500)000 = \text{Sh. } 1180\,000\,A$$

Material usage variance = Standard price (Standard quantity – Actual quantity)

$$= 480 (10\,000 \times 86) - 590000$$

$$= 480 (60\,000 - 59\,000) \text{ Sh. } 480,000\,F$$

$$\begin{aligned}\text{Material cost variance} &= \text{material price variance} + \text{material usage variance} \\ &= \text{Sh. } 1180\,000\,A + \text{Sh } 480\,000\,F = \text{Sh } 700\,000\,A\end{aligned}$$

ii) The Labour cost variance

$$\begin{aligned}\text{Labour rate variance} &= (\text{Standard rate} - \text{Actual rate}) \text{ Actual hours worked.} \\ &= (800 - 900) 47500 = \text{Sh. } 4750\,000\,A\end{aligned}$$

$$\begin{aligned}\text{Labour efficiency variance} &= (\text{standard hours} - \text{Actual hours}) \text{ Standard rate} \\ &= [(10\,000 \times 4.8) - 47500]800 \\ &= \text{Sh. } 400\,000\,F\end{aligned}$$

$$\begin{aligned}\text{Labour cost variance} &= \text{Labour rate variance} + \text{Labour efficiency variance} \\ &= 4750\,000\,A + 400\,000\,F = \text{Sh. } 4\,350\,000\,A\end{aligned}$$

iii) Reconciliation of standard and actual cost in a(i) and a(ii) above

Labour cost variance:

$$\text{Actual cost} = 47\,500 \times 900 = \text{Sh } 42,750,000$$

$$\text{Standard cost} = 48\,000 \times 800 = \text{Sh. } 38,400,000$$

	Sh
Standard Cost	38,400,000
Add: labour rate variance	4,750,000
Less: labour efficiency variance	(400,000)
Actual cost	42,750,000

Material cost variance:

Actual cost = $5\,900 \times 500 = \text{Sh } 29,500,000$

Standard cost = $60,000 \times 480 = \text{Sh. } 28,800,000$

	Sh
Standard cost	28,800,000
<i>Add:</i> material price variance	1,180,000
<i>Less:</i> material usage variance	(480,000)
Actual cost	29,500,000

QUESTION 18

November 2015 Question Four B

Qui Ltd manufactures a single product branded Q. the standard selling price and variable cost per unit of product _Q‘ are as follows:

	Sh.
Selling price	136
Materials 2 kilograms at Sh. 10 per kilogram	20
Labour 3 hours at Sh.24 per hour	72

Additional information:

1. The budgeted sales for the month of October 2015 were 38,000 units.
2. The actual results for the month of October 2015 were as follows.

Production and sales	36,000 units
Selling price per unit	Sh. 134
Materials (76,000 kilograms)	Sh.754, 000
Labour (114,000 hours paid)	Sh.2, 656,000

3. The company operates a standard costing system and a just-in-time (JIT) purchasing and production system.

Required:

Showing applicable variances, prepare a statement that reconciles the budgeted contribution with the actual contribution for the month of October 2015. (10 marks)

ANSWER

Statement that reconciles the budgeted contribution with the actual contribution

$$\text{Actual price} = \frac{\text{Total purchase cost}}{\text{Actual quantity purchased}}$$

$$= 754000 \div 76000 = 9.92$$

$$\text{Material price variance} = (\text{standard price} - \text{actual price}) \text{ Actual quantity}$$

$$= (10 - 9.92) 76000$$

$$S = h. 6000F$$

$$\text{Material usage variance} = (\text{Standard quantity} - \text{Actual quantity}) \text{ Standard price}$$

$$= (3,600 \times 2) - 76000)10$$

$$= (72,000 - 76,000)10 = Sh. 40,000A$$

$$\begin{aligned} \text{Actual rate per hour worked} &= \frac{\text{Total labour cost}}{\text{hours worked}} \\ &= 2656000 \div 114000 = \text{sh. } 23.30 \end{aligned}$$

$$\begin{aligned} \text{Labour rate variance} &= (\text{standard rate} - \text{Actual rate}) \text{ Actual hours} \\ &= (24 - 23.30) 11400 \\ &= \text{Sh. } 8000/= \end{aligned}$$

$$\begin{aligned} \text{Labour efficiency variance} &= \text{standard rate}(\text{standard hours} - \text{Actual hours}) \\ &= 24[(36000 \times 3) - 114000] \\ &= 24(10800 - 114000) = \text{Sh. } 144,000A \end{aligned}$$

Budgeted Contribution	
Selling price	136
Less: Material cost	(20)
Less: Labour cost	(72)
Contribution per unit	44
Budgeted output	<u>38,000</u>
Total contribution	<u>167,200</u>

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Sales volume contribution variance

$$\begin{aligned} &= [(\text{Budgeted sales unit}) - (\text{Actual sales})] \text{ budgeted contribution per unit} \\ &= (38,000 - 36,000) 44 = \text{sh. } 88,000 \text{ Adverse} \end{aligned}$$

$$\begin{aligned} \text{Price variance} &= (\text{Budgeted price} - \text{Actual price}) \text{ Actual units sold} \\ &= (136 - 134)000 = 72,000 A \end{aligned}$$

Actual production and sales	
Selling price 36000×144=	4,824,000
<i>Less:</i> material cost	(754,000)
<i>Less:</i> labour cost	(2,656,000)
Total contribution	1,414,000

Reconciliation statement	
Budgeted contribution	1,672,000
Material price variance	(6,000)
Material usage variance	(40,000)
Labour rate variance	80,000
<i>Less:</i> Labour efficiency variance	144,000
<i>Less</i> sales price variance	72,000
<i>Less:</i> sales volume contribution variance	88,000
Actual contribution	1,414,000

QUESTION 19

Pilot paper 2015 Question Two B

A limited company operates a system of standard costing. The following information is available for the month of July 2015:

- Actual cost data:

	Sh.
Direct materials purchased (36000 Kgs.)	1,890,000
Direct wages (6800 hours)	2,210,000
Variable production overheads	620,000

Fixed production overheads	1,880,000
----------------------------	-----------

2. Output during the period was 3500 units of product Y.
3. The standard production units were budgeted at 4800 units.
4. The standard cost data per unit is as follows:

	Sh.
Direct materials purchased (Sh.500 per Kg.)	500
Direct wages (2 hours)	600
Variable production overheads	200
Fixed production overheads	<u>400</u>
	<u>1700</u>

5. Labour records show 6200 hours were worked. 600 hours were recorded as idle time due to machine breakdown.

Required:

- | | |
|--|-----------|
| (i) Direct material cost, price and usage variance. | (4 marks) |
| (ii) Labour cost, rate, efficiency and idle time variance. | (6 marks) |
| (iii) Variable overheads cost variance. | (2 marks) |
| (iv) Fixed overhead expenditure variance. | (2 marks) |

ANSWER

Direct material cost, price and usage variance

Direct Material Cost Variance

$$\begin{aligned} &= \text{Standard price} \times \text{Standard quantity} - \text{Actual price} \times \text{Actual quantity} \\ &= 500 \times 3500 - 52.5 \times 3600 \\ &= 140,000(A) \end{aligned}$$

Direct Material Price Variance

$$\begin{aligned} &= \text{Actual quantity} (\text{Standard price} - \text{Actual price}) \\ &3600(500 - 52.50) \\ &= 16,110,000F \end{aligned}$$

Material Usage Variance

Standard price (Standard quality- Actual quantity)

Where, standard quantity

$$\begin{aligned} &\text{Standard quantity per unit} \times \text{Actual production} \\ &= 1kg \times 3500 = 3500 \\ &= 500(3500 - 3600) \\ &= 16,250,000 (A) \end{aligned}$$

ii) Labour cost, rate, efficiency and idle time variance

labour rate variance = Actual hours(standard Rate – Actual rate)

$$= 6,800(300 - 325) = 170,000A$$

Labour efficiency variance = *Standard rate*(*standard hours* – *Actual hours*)

Where *standard hours* = *Standard hours/unit* × *actual production*

$$= 2\text{hours} \times 3500 = 7000 \text{ hours}$$

$$= 300(7000 - 6800) = 60,000F$$

Labour cost variance = *labour rate variance* + *labour efficiency variance*

$$= 170,000A + 60,000F = 110,000F$$

Idle time variance = *idle time* × *standard rate*

$$= 600 \times 300 = 180,000 A$$

iii) Variable overhead cost variance

= *standard variance cost* × *actual production* – *actual variable overhead cost*

$$= 200 \times 3500 - 620,000$$

$$= 80,000F$$

iv) Fixed overhead expenditure variance

= *budgeted fixed cost* – *Actual fixed cost*

$$= (400 \times 4800) - 1,880,000$$

$$= 4000$$