ACC313 MANAGEMENT ACCOUNTING SUMMARY

UNIT 1: GENERAL PRINCIPLES OF COSTING

MEANING OF COSTING

Costing refer to a system of calculating the amount of money it takes to produce goods or operate a business. Costing may be defined as 'the technique and process of ascertaining costs'. According to Wheldon, 'Costing refers to classifying, recording, allocation and appropriation of expenses for the determination of cost of products or services and for the presentation of suitably arranged data for the purpose of control and guidance of management. It includes the ascertainment of cost forever order, job, contract, process, service units as may be appropriate. It deals with the cost of production, selling and distribution. For any business organization, ascertaining of costs is must and for this purpose a scientific procedure should be followed. 'Costing' is precisely this procedure which helps them to find out the costs of products or services.

IMPORTANCE AND BASIC PRINCIPLES OF COSTING

Computation of cost on scientific basis and thereafter cost control and cost reduction is of paramount importance. Hence it has become essential to study the basic principles and concepts of cost accounting.

Cost:- Cost can be defined as the expenditure (actual or notional) incurred on or attributable to a given thing. It can also be described as the resources that have been sacrificed or must be sacrificed to attain a particular objective. In other words, cost is the amount of resources used for something which must be measured in monetary terms.

Cost Accounting:- Cost accounting is a combination of art and science, it is a science as it has well defined rules and regulations, it is an art as application of any science requires art and it is a practice as it has to be applied on continuous basis and is not a onetime exercise. Cost Accounting primarily deals with collection, analysis of relevant cost data for interpretation and presentation for solving various problems of management. Cost accounting takes into cognizance, the cost of products, service or an operation. It is defined as, 'the establishment of budgets, standard costs and actual costs of operations, processes, activities or products and the analysis of variances, profitability or the social use of funds'.

Cost Accountancy:- Cost Accountancy is a broader term and is defined as, 'the application of costing and cost accounting principles, methods and techniques to the science, art and practice of cost control and the ascertainment of profitability as well as presentation of information for the purpose of managerial decision making.

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DIFFERENCE BETWEEN COSTING AND COST ACCOUNTING

Basis of Distinction	Costing	Cost Accounting
1. Nature	It is a technique and process of ascertaining costs	It is regarded as a specialized branch of accounting.
2. Scope	The costing techniques include principles and rules which govern the procedure of ascertaining the cost of products/services	It involves classification, accumulation, assignment and control of costs.
3. Process	The process of costing consists of routines of ascertaining costs by historical or conventional costing, standard costing or marginal costing.	It involves establishment of budgets, standard costs or actual costs of operations, classification, recording and appropriate allocation of expenditure.

ESSENTIALS OF A GOOD COSTING SYSTEM

For availing of maximum benefits, a good costing system should possess the following characteristics.

A. Costing system adopted in any organization should be suitable to its nature and size of the business and its information needs.

B. A costing system should be such that it is economical and the benefits derived should be more than the cost of operating the cost system.

C. Costing system should be simple to operate and understand. Unnecessary complications should be avoided.

D. Costing system should ensure proper system of accounting for material, labour and overheads and there should be proper classification made at the time of recording of the transaction itself.

E. Before designing a costing system, need and objectives of the system should be identified.

F. The costing system should ensure that the final aim of ascertaining of cost as accurately possible should be achieved.

CLASSIFICATION OF COSTING

Classification of costs can be made according to the following basis:

A. Classification according to elements:- Costs can be classified according to the elements. There are three elements of costing, viz-a-viz: material, labour and expenses. Total cost of

production/services can be divided into the three elements to find out the contribution of each element in the total costs.

B. Classification according to nature:- As per this classification, costs can be classified into Direct and Indirect. Direct costs are the costs which are identifiable with the product unit or cost centre while indirect costs are not identifiable with the product unit or cost centre and hence they are to be allocated, apportioned and then absorbed in the production units. All elements of costs like material, labour and expenses can be classified into direct and indirect.

They are mentioned below.

i. Direct and Indirect Material Costs:- Direct material is the material which is identifiable with the product. For example, in a cup of tea, quantity of milk consumed can be identified, quantity of glass in a glass bottle can be identified and so these will be direct materials for these products.

ii. Direct and Indirect Labour Costs:- Direct labour can be identified with a given unit of product, for example, when wages are paid according to the piece rate, wages per unit can be identified.

iii. Direct and Indirect Expenses:- Direct expenses refers to expenses that are specifically incurred and charged for specific or particular job, process, service, cost centre or cost unit. These expenses are also referred to as chargeable expenses. Examples of these expenses are cost of drawing, design and layout, royalties payable on use of patents, copyrights etc. consultation fees paid to architects, surveyors etc.

C. Classification according to behaviour:- Costs can also be classified according to their behaviour. This classification is explained below.

i. Fixed Costs:- Out of the total costs, some costs remain fixed irrespective of changes in the production level. These costs are referred to as fixed costs. The feature of these costs is that the total costs remain unchanged while per unit fixed cost varies with teh level of production. Examples of these costs are salaries, insurance, rent, etc.

ii. Variable Costs:- These costs are variable in nature, i.e. they change according to the level of production. Their variability is in the same proportion to the production. For example, if the production units are 2,000 and the variable cost is #5 per unit, the total variable cost will be #10,000 (i.e. 2,000 x #5), if the production units are increased to 5,000 units, the total variable costs will be #25,000, i.e. the increase is exactly in the same proportion of the production.

iii. Semi-variable Costs:- Certain costs are partly fixed and partly variable. In other words, they contain the features of both types of costs. These costs are neither totally fixed nor totally variable. Maintenance costs, supervisory costs etc. are examples of semi-variable costs. These costs are also referred to as ‘stepped costs’.

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D. Classification according to functions:- Costs can also be classified according to the functions/activities. This classification can be done as mentioned below.

i. Production Costs:- All costs incurred for production of goods are known as production costs.

ii. Administrative Costs:- Costs incurred for administration are known as administrative costs. Examples of these costs are office salaries, printing and stationery, office telephone, office rent, office insurance etc.

iii. Selling and Distribution Costs:- All costs incurred for procuring an order are referred to as selling costs while all costs incurred for execution of order are distribution costs. Market research expenses, advertising, sales staff salary, sales promotion expenses are examples of selling costs. Transportation expenses incurred on sales, warehouse rent etc. are examples of distribution costs.

iv. Research and Development Costs:- In recent times, research and development has become one of the important functions of a business organization. Expenditure incurred for this function can be classified as Research and Development Costs.

E. Classification according to time:- Costs can also be classified according to time. This classification is explained below

i. Historical Costs:- These are the costs which are incurred in the past, i.e. in the past year, past month or even in the last week or yesterday. The historical costs are ascertained after the period is over. In other words it becomes a postmortem analysis of what has happened in the past.

ii. Predetermined Cost:- These costs relating to the product are computed in advance of production, on the basis of a specification of all the factors affecting cost and cost data. Pre-determined costs may be either standard or estimated.

F. Classification of costs for Management decision making:- One of the important functions of cost accounting is to present information to management for the purpose of decision-making. For decision making certain types of costs are relevant. Classification of costs based on the criteria of decision making can be done in the following manner:

i. Marginal Cost:- Marginal cost is the change in the aggregate costs due to change in the volume of output by one unit. For example, suppose a manufacturing company produces 10,000 units and the aggregate costs are #25,000, if 10,001 units are produced the aggregate costs may be #25,020 which means that the marginal cost is #20. Marginal cost is also termed as variable cost and hence per unit marginal cost is always same, i.e. per unit marginal cost is always fixed. Marginal cost can be effectively used for decision making in various areas.

ii. Differential Costs:- Differential costs are also known as incremental cost. This cost is the difference in total cost that will arise from the selection of one alternative to the other. In other words, it is an added cost of a change in the level of activity.

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iii. Opportunity Costs:- It is the value of benefit sacrificed in favour of an alternative course of action. It is the maximum amount that could be obtained at any given point in time if a resource was sold or put to the most valuable alternative use that would be practicable.

iv. Relevant Cost:- The relevant cost is a cost which is relevant in various decisions of management. Decision making involves consideration of several alternative courses of action.

VI. Abnormal Costs:- It is an unusual or a typical cost whose occurrence is usually not regular and is unexpected. This cost arises due to some abnormal situation of production. Abnormal cost arises due to idle time or may be due to some unexpected heavy breakdown of machinery

VII. Controllable and Uncontrollable Costs:- In cost accounting, cost control and cost reduction are extremely important. In fact, in the competitive environment, cost control and reduction are the key words. Hence it is essential to identify the controllable and uncontrollable costs.

VIII. Shutdown Cost:- These costs are the costs which are incurred if the operations were to close down and they will disappear if the operations are continued. Examples of these costs are costs of sheltering the plant and machinery and construction of sheds for storing exposed property.

IX. Capacity Cost:- These costs are normally fixed costs which are incurred by a company for providing production, administration and selling and distribution capabilities in order to perform various functions. Capacity costs include the costs of plant, machinery and building for production, warehouses and vehicles for distribution and key personnel for administration.

X. Urgent Costs:- These costs are those which must be incurred in order to continue operations of the firm. For example, cost of material.

COSTING METHODS AND TECHNIQUES

Methods of Costing:- The following are the methods of costing.

I. Job Costing:- This costing method is used by firms which work on the basis of job work. There are some manufacturing units which undertake job work and are called job order units. The main feature of these organizations is that they produce according to the requirements and specifications of the consumers. Each job may be different from the other one. Production is only on specific order and there is no pre-demand production. B

II. Batch Costing:- This method of costing is used in those firms where production is made on continuous basis. Each unit coming out is uniform in all respects and production is made prior to the demand, i.e. in anticipation of demand. One batch of production consists of the units produced from the time machinery is set to the time when it will be shut down for maintenance.

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III. Process Costing:- Some of the products like sugar, chemicals etc. involve continuous production process and hence process costing method is used to work out the cost of production. In process costing, cost per process is worked out and per unit cost is worked out by dividing the total cost by the number of units. Manufacturing companies that engage in the production of products such as sugar, edible oil, chemicals are examples of continuous production process and they use process costing.

IV. Operating Costing:- This type of costing method is used in service sector to work out the cost of services offered to the consumers. For example, operating costing method is used in hospitals, power generating units, transportation sector etc. A cost sheet is prepared to compute the total cost and it is divided by cost units for working out the per unit cost.

V. Contract Costing:- This method of costing is used in construction industry to work out the cost of contract undertaken. For example, cost of constructing a bridge, commercial complex, residential complex, highways etc. is worked out by use of this method of costing.

TECHNIQUE OF COSTING

The following are the techniques of costing.

I. Marginal Costing:- This technique is based on the assumption that the total cost of production can be divided into fixed and variable. Fixed costs remain same irrespective of the changes in the volume of production while the variable costs vary with the level of production, i.e. they will increase if the production increases and decrease if the production decreases. Variable cost per unit always remains the same.

II. Standard Costing:- Standard costs are predetermined costs relating to material, labour and overheads. Though they are predetermined, they are worked out on scientific basis by conducting technical analysis. They are computed for all elements of costs such as material, labour and overheads. The main objective of standard costing is to have a benchmark against the actual performance. This means that the actual costs are compared with the standards. The difference is called 'variance'.

III. Budgets and Budgetary Control:- Budget is defined as, 'a quantitative and/or a monetary statement prepared prior to a defined period of time for the policies during that period for the purpose of achieving a given objective.' If we analyse this definition, it will be clear that a budget is a statement, which may be expressed either in monetary form or quantitative form or both.

UNIT 2 COST ACCOUNTING SYSTEMS

WHAT IS COST ACCOUNTING SYSTEM?

A cost accounting system (also called product costing system or costing system) is a framework used by firms to estimate the cost of their products for profitability analysis, inventory valuation and cost control. Estimating the accurate cost of products is critical for profitable operations. Note that cost accounting is a process of collecting, recording,

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classifying, analysing, summarising, allocating and evaluating various alternative courses of action and control of costs. Its goal is to advise management on the most appropriate course of action based on cost efficiency and capability. Cost accounting provides the detailed cost information that management needs in order to control current operations and plan for the future.

Types of Cost Accounting include the following:

1. Standard cost accounting
2. Activity-based accounting
3. Resource consumption accounting
4. Throughput accounting
5. Life cycle costing
6. Environment accounting
7. Target costing

COMPARISON BETWEEN COST ACCOUNTING AND FINANCIAL ACCOUNTING

1. Financial accounting aims at finding out results of accounting year in the form of Profit or Loss Account and Statement of Financial Position. Cost accounting aims at computing cost of production/service in a scientific manner and facilitates cost control and cost reduction.

2. Financial accounting reports the results and position of business to government, creditors, investors, and external parties.

3. Cost accounting is an integral reporting system for an organisation's own management for decision-making.

4. In financial accounting, cost classification is based on type of transactions, for example, salaries, repairs, insurance, stores and others. In cost accounting, classification is basically on the basis of functions, activities, products, processes and on internal planning and control and information needs of the organisation.

5. Financial accounting aims at presenting "true and fair" view of transactions, Profit or Loss for a period and Statement of financial position (Balance Sheet) on a given date. It aims at computing "true and fair" view of the cost of production/services offered by the firm.

DISTINCTION BETWEEN COST ACCOUNTING AND MANAGEMENT ACCOUNTING

The distinction between cost accounting and management accounting may be made on the following bases:

1. Scope: Scope of cost accounting is limited to providing cost information for managerial uses. Scope of management accounting is broader than that of cost accounting as it provides all types of information. Thus, management accounting is an extension of cost accounting.

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2. Emphasis: The main emphasis of cost accounting is on cost ascertainment and cost control to ensure maximum profit. On the other hand, the main emphasis of management accounting is on planning, controlling and decision-making so as to provide a basis for ascertaining profit of the entity.

3. Techniques Employed: Various techniques used by cost accounting include standard costing and variance analysis, marginal costing and cost-volume-profit analysis, budgetary control, uniform costing and inter-firm comparison.

4. Evolution: Evolution of cost accounting is mainly due to the limitations of financial accounting. On the other hand, evolution of management accounting is due to the limitations of cost accounting. In fact, management accounting is an extension of the managerial aspects of cost accounting.

5. Data Base: Cost accounting is based on data derived from financial accounting, but management accounting is based on data derived from cost accounting, financial accounting and other sources.

PARTS OF A COST ACCOUNTING SYSTEM

A cost accounting system requires five parts that include:

1. An input measurement basis
2. An inventory valuation method
3. A cost accumulation method
4. A cost flow assumption
5. A capability of recording inventory cost flows at certain intervals.

We shall look at them one after the other.

Input Measurement Bases

The bases of a cost accounting system begin with the type of costs that flow into and through the inventory accounts. There are three alternatives: pure historical costing, normal historical costing and standard costing.

- Pure Historical Costing: In pure historical cost system, only historical costs flow through the inventory accounts. Historical costs refer to the costs that have been recorded. These are costs for direct material, direct labour and factory overhead.
- Normal Historical Costing: Normal historical costing uses historical costs for direct material and direct labour, but overhead is charged, or applied to the inventory using a predetermined overhead rate per activity measure. Typical activity measures include direct labour hours, or direct labour costs.
- Standard Costing: In a standard cost system, all manufacturing costs or• applied, or charged to the inventory using standard or predetermined prices, and quantities. The differences between the applied costs and the actual costs are charged to variance accounts.

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Inventory Valuation Methods

The inventory valuation methods encompass the following:

- Throughput method
- Direct or variable method
- Full absorption method
- Activity-based method

i) Throughput Method: The throughput method was developed to complement a concept referred to as the Theory of Constraints (TOC). In this method, only direct material costs are charged to the inventory. All other costs are expensed during the period.

ii) Direct or Variable Method: In the direct (or variable method), only the variable manufacturing costs are capitalised, or charged to the inventory. Fixed manufacturing costs flow into expense in the period incurred. This method provides some advantages and some disadvantages for internal reporting.

iii) Full Absorption Method: Full absorption costing is a traditional method where all manufacturing costs are capitalised in the inventory, that is, charged to the inventory and become assets. This means that these costs do not become expenses until the inventory is sold.

iv) Activity-Based Method: Activity-based costing is a relatively new type of procedure that can be used as an inventory valuation method. The technique was developed to provide more accurate product costs. This improved accuracy is accomplished by tracing costs to products through activities.

Cost Accumulation Method

Cost accumulation refers to the manner in which costs are collected and identified with specific customers, jobs, batches, orders, departments and processes. The four accumulation methods are job order, process, back flush, and hybrid (or mixed) method.

- Job Order: In job order costing, costs are accumulated by jobs, orders, contracts, or lots. The idea is that the work is done to the customers' specifications.
- Process: Costs are accumulated by departments, operations, or processes in process costing. The work performed on each unit is standardised or uniform where a continuous mass production or assembly operation is involved
- Back Flush: Back flush is a simplified cost accumulation method that is sometimes used by companies that adapt just-in-time (JIT) production systems.
- Hybrid (or Mixed) Methods: Hybrid or mixed systems are used in situations where more than one cost accumulation method is required. For example, in some cases, process costing is used for direct materials and job order costing is used for conversion costs (that is, direct labour and factory overhead).

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Cost Flow Assumptions

A cost flow assumption refers to how costs flow through the inventory accounts, not the flow of work or products on a production line. This distinction is important because the flow of costs is not always the same as the flow of work. The various types of cost flow assumptions include:

- Scientific identification (e.g., by job)
- First in, first out (FIFO)
- Last in, first out (LIFO)
- Weighted average

Recording Interval Capability

Inventory records can be maintained on a perpetual or periodic basis. Consequently, the perpetual inventory method provides a company with the capability of maintaining continuous records of the quantities of inventory and the costs flowing through the inventory accounts. The periodic method, on the other hand, requires counting the quantity of inventory before inventory records can be updated.

NECESSITY FOR COST ACCOUNTING SYSTEM

A company having a proper cost accounting system will help management in the following areas as highlighted:

1. The analysis of profitability of individual products, services or jobs.

2. The analysis of the different departments or operations.

3. The analysis of cost behaviour of various items of expenditure in the organisation. This will help in future cost estimation with reasonable accuracies.

4. It locates differences between actual results and expected results. Such differences can also be traced to the individual cost centres with the efficient cost system.

5. It will assist in setting the process so as to cover costs and generate an acceptable level of profit.

6. The effects on profits of increase or decrease in output or shutdown of a product line or department can be analysed with the adoption of efficient cost accounting system.

7. Cost records serve as the base for Management Information System (MIS).

8. The cost system generates regular performance statements which management needs for control purposes.

UNIT 3: DETERMINATION OF COST BEHAVIOUR

COST BEHAVIOUR CONCEPT

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Cost behaviour is the study of the ways in which cost react or do not react to changes in the level of activity of an organisation. Knowledge of cost behaviour is the basis of all cost-volume-profit (C. V.P) analyses. When we know the behaviour of costs, then financial planning is made simpler.

LEVEL OF ACTIVITY

The level of activity is the amount of work done or the number of events that has occurred. The type of activity which influences cost varies according to the nature o work done in the organisation or department, and the nature of the items of cost whose behaviour is being analysed depending on the circumstance, the level of activity may refer to the volume of production in a period, the number of items sold, the value of items sold, the number of invoices issued, the number of invoices received the number and units of electricity consumed, etc.

REASONS FOR STUDYING COST BEHAVIOUR

There are three principal reasons for studying how costs respond to changes in the level of activities:

1. For the prediction of cost to facilitate budgetary and corporate planning
2. For performance evaluation when a system of flexible budgetary control is in operation
3. For the estimation of costs for various decision making processes e.g. pricing decisions make or buy decision, optimal product mix, shut-down decisions etc.

CONCEPT OF RELEVANT RANGE

This is the range in which all assumptions about the level of activities and cost will remain valid. Within this range, most items of cost will settle into a basic pattern or behaviour and cost can be classified into either fixed or variable cost.

BASIC PRINCIPLES OF COST BEHAVIOUR

The basic principle of cost behaviour is that, as the level of activity rises, costs will usually rise. It will cost more to produce 2,000 units of an output than it will cost to produce 1,000 units of the same product. This principle is common sense.

The problem for the accountant, however, is to determine for each item of cost, as the level of activity increases:

The ways in which the costs behave to changes in activity level; (i.e. are costs)

Fixed, varied, stepped or mixed

By how much (i.e. what is the amount of fixed cost per period and what is the variable cost per unit of activity?)

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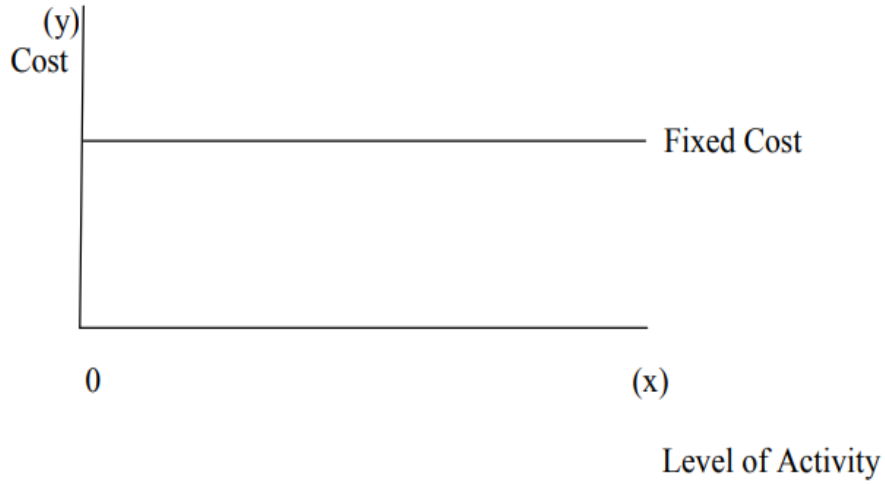
THE TYPES OF COST BEHAVIOUR

Fixed Costs

Fixed costs are those costs, which do not vary with output or production level. They vary with the passage of time hence they are time or period cost. They remain constant in given short term period and within relevant range of output. Fixed costs are costs of holding assets and other factors of production in readiness for production. A company when defining fixed cost should take the following factors into consideration:

- Controllability —All fixed costs are controllable in the long run. Some fixed costs are subject to management control in the short-run.
- Relevant range —Fixed cost must be related to a range of activity. A fixed cost would only remain constant only when level of operation is within relevant range.
- Period cost —Because they accrue with the passage of time, the amount of the fixed costs must be related at specified period of time. Fixed costs should be related to a financial year and expressed as a constant amount per month.
- Fixed in total but variable per units —A fixed cost is constant in total amount per period, but variable in terms of unit cost

A sketch graph of a fixed cost would look like:



Examples of fixed costs are:

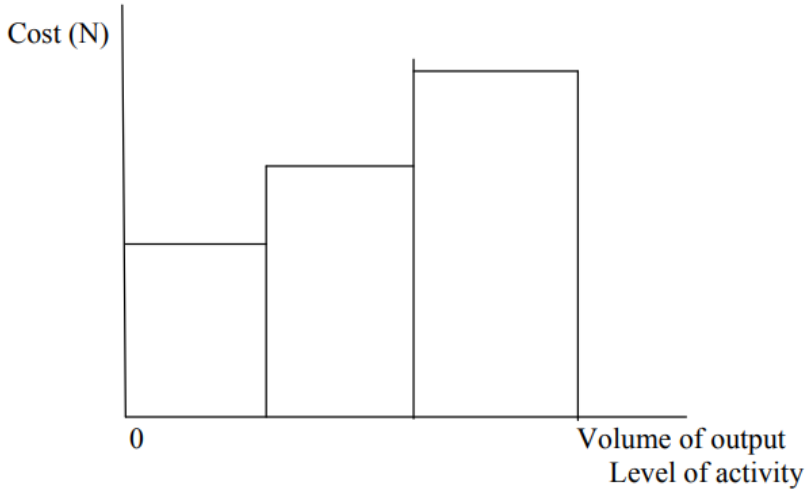
1. The salary per month of a supervisor
2. The rent of a single factory building per month or per annum

Step Cost

This is a variant of the fixed cost. Many items of cost are fixed in nature but within certain levels of activity i.e. a relevant range. For example, the annual depreciation cost of a machine may be fixed if production remains below 1,000 units for machine that has a maximum capacity of 1,000 units, but if production is to exceed 1,000 unit, even by 1 unit, then a

second machine would be required, and the annual depreciation cost on two machines would go up in a stepped manner.

A sketch graph of a step cost would look like:



Other examples of step cost area:

1. Rent — where accommodation requirements increase, as output levels get higher.
2. Basic wages — basic pay of employees is nowadays usually fixed, but as output rises, more employees are required.

Variable Costs

A variable cost is one, which tends to vary with the volume of output. The variable cost per unit is the same amount for each unit produced, which means that the amount of resources used and the price of these resources are constant for each additional unit produced. The total cost of a variable cost item would be shown graphically as follows:



3.7.4 Total Cost

Mixed Costs

Mixed costs are also referred to as semi-variable or semi-fixed cost. They are cost items which are partly fixed and partly variable i.e. costs which contain a standing basic charge plus a variable charge per unit of consumption e.g. telephone bills, electricity bill, etc.

UNIT 4: ELEMENT OF COST AND COST ESTIMATION TECHNIQUES

Definition of Cost

A cost is the value of economic resources used as a result of producing a product or service" (WM. Harper)· Cost is "the amount of expenditure (actual or notional) incurred on or attributable to a given thing" (ICMA)· Cost is "an exchange price, a foregoing, a sacrifice made to secure benefit" (A tentative set of Broad Accounting Principles for Business Enterprises).

The Nature and Types of Cost Classification

Costs can be classified in a number of different ways:

- By their behavior. Do they increase as an organisation gets busier or do they tend to stay the same? This is important when it comes to budgeting as it is essential to be able to predict how costs are likely to change.
- By their location. Where in the organisation are they incurred? For example, costs incurred in the factory are relevant to working out the cost of production. However, costs incurred in storing and delivering finished goods are not relevant to production.
- By their function. For example costs related to research and development, marketing, training, manufacturing.
- By the person responsible for their control. All costs need to be controlled and there should be a clearly identified person who is responsible for the control of each cost. For example, the managers of a branch might be held responsible for the costs incurred there.
- By their type. For example, material, labour, other production expenses, such as the cost of running machinery.
- By their traceability. Are they direct or indirect? Direct costs are closely related and traceable to each item produced. Indirect costs are not so easy to relate and trace to each unit of production.

Variable Cost

A variable cost is a cost that changes in relation to variations in an activity. In a business, the "activity" is frequently production volume, with sales volume being another likely triggering event. Here are a number of examples of variable costs, all in a production setting:

Direct materials. The most purely variable cost of all, these are the raw materials that go into a product.

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Piece rate labour. This is the amount paid to workers for every unit completed (note: direct labour is frequently not a variable cost, since a minimum number of people are needed to staff the production area; this makes it a fixed cost).

Production supplies. Things like machinery oil are consumed based on the amount of machinery usage, so these costs vary with production volume

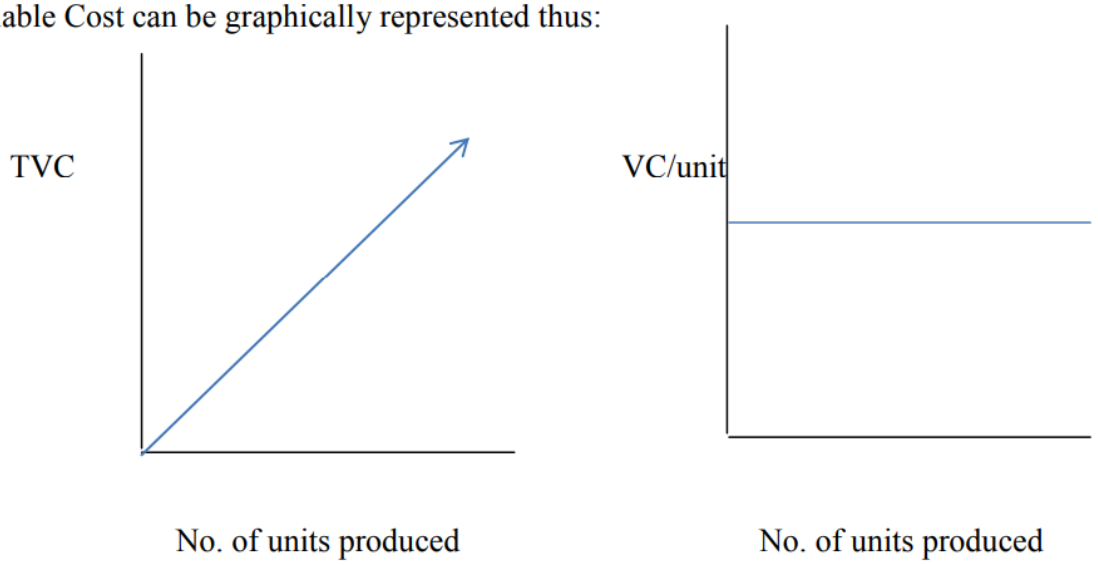
Billable staff wages. If a company bills out the time of its employees, and those employees are only paid if they work billable hours, then this is a variable cost.

Commissions. Salespersons are paid a commission only if they sell products or services, so this is clearly a variable cost.

Credit card fees. Fees are only charged to a business if it accepts credit card purchases from customers. Only the credit card fees that are a percentage of sales (i.e., not the monthly fixed fee) should be considered variable.

Freight out. A business incurs a shipping cost only when it sells and ships out a product. Thus, freight out can be considered a variable cost.

Variable Cost can be graphically represented thus:



Total Cost

Total cost is an economic measure that sums all expenses paid to produce a product, purchase an investment, or acquire a piece of equipment including not only the initial cash outlay but also the opportunity cost of their choices.

UNIT 5 BUDGETS AND BUDGETARY CONTROL

DEFINITION OF BUDGET

A budget is defined as "a quantitative statement for a defined time which may include planned revenues, expenses, assets, liabilities and cash flow. This involves comprehensive

and coordinated plans, expressed in the financial terms, for the operation and resources of an enterprise for some specific period in the future. A budget provides a focus for the organisation, aids the coordination of activities and facilitates control. Budget is a financial and/or quantitative plan of operations for a forthcoming accounting period.

The purpose of a budget is to:

(i) Communicate ideas and plans to everyone affected by them.

(ii) Coordinate the activities of different departments or sub-units of the organization.

(iii) Establish a system of control by having a plan against which actual results can be progressively compared and variance analysed for prompt attention and action.

(iv) Motivate employees to improve their performances.

THE TYPES OF BUDGET

(a) Functional budgets

Functional budgets are prepared by the departmental heads. The order of importance in preparation of the budget depends on the budget limiting factor of the organisation. Where sales are considered critical to the success of the objectives, the sales budget is prepared first. Similarly, where source of raw material is restricted and in limited supply the raw material budget is prepared first.

(b) Master budget

The master budget consolidates the position of all the functional budgets in the form of a budgeted trading and profit and loss account and a budgeted statement of financial position.

BUDGET PREPARATION AND APPROVAL PROCEDURES

1 Budgets Preparation Procedures

The business of any organisation must be conducted in an organised and orderly manner to achieve the desired results. Budget preparation is a serious activity of management and some time should be expended on it. In practice, top management may constitute a budget committee which could comprise:

(a) The Managing Director/ Chief Executive Officer as the Chairman

(b) Chief Accountant (or Director of finance) as the budget officer.

(c) The head of department or the line and service managers who prepares the functional budgets of the department.

2 Approval of the master budget

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The budget committee will submit the master budget to the top management (usually the board of directors) for approval. If it is approved, the master budget will then become the blueprint for the activities of the budgeted period. If approval is not received, sections of the budget will have to be amended to incorporate any change or review in emphasis so as to meet the requirements of top management. However, these requirements should be realistic.

PREPARATION OF BUDGETS

1 Cash Budget

A cash budget is a summary of the company's expected cash inflows and outflows over a given period of time. Cash is required in order to facilitate the achievement of a company's plans and intentions. Inadequate flow of liquidity will hamper efficiency and level of profitability of the firm. A company may be profitable but, still faces liquidity problems. Cash is a resource which should be effectively utilised in order to generate benefits for the company Cash budget shows the timing of expected cash flows. The benefits to be derived from the preparation of detailed cash budget are as follows:

(i) It provides early signals of potential deficit or surplus in order to take appropriate action

(ii) It enables financial feasibility of plans to be ascertained.

(iii) It indicates the financial effects of policies within a firm.

(iv) It provides a base for monitoring actual activity.

TECHNIQUES USED IN BUDGETING

1 Flexible budget

The C1MA defines a flexible budget as "a budget which is designed to change in accordance with the level of activity attained". A flexible budget recognises the existence of fixed, variable and semi-variable costs, and it is designed to change in relation to the actual volume of output or level of activity in a period.

The principles underlying the flexible budget are:

(i) to prepare 'contingency plans' in advance.

(ii) budgetary control.

The concept of flexible budget was to focus on how control could be achieved over the operations. In a flexible budget, overheads are analysed into three, namely:

(a) fixed

(b) variable

(c) semi variable

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2 Zero-based budget (ZBB) or "priority based budgeting"

ZBB was introduced in the early 1970s in the United States by O. Phyrr. ZBB is a budgeting technique which seeks to eliminate the draw backs of traditional incremental budgeting by taking the budgets for service or overhead centres back to a minimal operating level and then requiring increments above this level to be quantified and justified. 'A method of budgeting which requires each cost element to be specifically justified, as though, the budget related were being undertaken for the first time, without approval, the budget allowance is zero" CIMA''.

ZBB is concerned with the evaluation of the costs and benefits of alternatives and, implicit in the technique, is the concept of opportunity cost. ZBB is applied in three stages

(i) The decision unit: This means subdividing the organisation to discrete sub-units where operations can be meaningfully and individually identified and evaluated.

(ii) The decision packages: Each decision unit manager submits no less than three budget packages namely

(a) the lowest level of expenditure

(b) the expenditure required to maintain levels of activity

(c) the expenditure required to provide an additional level of service or activity.

(iii) Agreed packages will form the budget.

The Advantages of ZBB

(i) Results in a more efficient allocation of resources to activities and departments.

(ii) It focuses attention on value for money

(iii) ZBB develops a questioning attitude which enables management to determine inefficiency.

(iv) It may lead to cost reduction.

(v) Managers performance can be monitored.

The Disadvantages of ZBB

(i) ZBB is a time consuming process and generates volume of paperwork especially for the decision packages.

(ii) It requires management skill in both drawing decision packages and for the ranking process.

(iii) It encourages the wrong impression that all decisions have to be made in the budget.

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(iv) Trade Union always go against ZBB, who prefer status quo to remain.

(v) Co-ordination of all activities may be difficult.

3 Activity based budgeting (ABB)

Activity based budgeting (ABB) which is also known as Activity Cost Management is defined as ` method of budgeting based on an activity framework and utilizing cost driver data in the budget-setting and variance feedback processes" (ICMA). It is a part of planning and control system which tends to support the objectives of continuous improvement. ABB is a form of development of conventional budgeting system. It is also based on activity analysis techniques.

ABB FEATURES

(a) It enables costs to be managed and understood in the long run.

(b) ABB differentiates and examines activities for their value adding potentials.

(c) The department activities are driven by demands and decisions which are beyond the control of the budget holder.

(d) It encourages immediate and relevant performance measures required than are found in conventional budgeting systems.

The Advantages of ABB

(i) It provides stronger links between an organization's strategic objectives.

(ii) It has ability to tackle cross organisational issues through a participating approach.

(iii) It also uses activity analysis techniques which promotes continuous improvement.

4 Planning, Programming, Budgeting System (PPBS)

PPBS analyses the output of a given programme and also seeks for the alternatives to find the most effective means of reaching basic programme activities. PPBS involves the preparation of a long-term corporate plan that clearly establishes the objectives that the organization have to achieve. PPBS is the counter part of the long-term process for profit-oriented organisations.

Aims and Objectives of PPBS

(i) The aim of PPBS is to enable the management of a non-profit making organisation to make more informed decision about the allocation of resources to meet the overall objectives of the organisation.

(ii) It enables the management to identify the activities, functions or programmes to be provided thereby establishing a basis for evaluation of their worthiness

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(iii) PPBS provides information that will enable management to assess the effectiveness of its plans.

Stages In PPBS

(i) Calls for a careful specification and overall objectives are determined.

(ii) Identify programmes that will achieve these objectives and those programmes which are normally related to the major activities undertaken by government establishments.

(iii) The costs and benefits of each programme are determined, so that budget allocations can be made on the basis of the cost-benefit of the programme.

(iii) Analyses the alternatives to find the most effective means of reaching basic programme objectives.

(iv) This analytical procedure will be established as to systematically form part of budgetary control.

5 Continuous Budget/Rolling Budget

Continuous budget which is known as rolling budget is a system of budgeting that involves continuously updating budgets by reviewing the actual results of a specific period in the budget and determining a budget for the corresponding time period. It has been described as an attempt to prepare targets and plans which are more realistic and certain by shortening the period of budget preparations. Under this method, instead of preparing a budget annually, there would be budget every three or six months so that as the current period ends, the budget is extended by an extra period; for example, if a continuous budget is prepared every three months, the first three months would be planned in great details and the nine months in lesser details, because of the greater uncertainty above the longer term future.

Advantages

i. Management is made to be continuously aware of the budgetary process since the figures for the next 12 months are always available.

ii. It allows for more frequent assessment and revision of the budgets in the light of current trends particularly during the period of inflation, thus, the budget does not become quickly obsolete or outdated.

Disadvantages

i. Higher costs and efforts are required for continuous budgeting.

ii. It is time consuming in that, in each period, the whole procedures of preparing budgets have to be undertaken.

FORECAST

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"The technique of business forecasting has been developed to give a logical and comprehensive means of providing management with information to determine the most advantageous plans which can be made within the anticipated resources of the business." (MA).Despite the uncertainty that exists about the future, business plans are prepared to resolve some of this uncertainty.

DISTINCTION BETWEEN FORECAST AND BUDGETS

A forecast states the events which are likely to occur in the future. A budget states the plans which the managers will endeavour to turn into actual events. It is a statutory executive order.

FORECASTING PROCEDURES

a) Assessments by staff of sales department: Estimates should be made by the individual salesmen and passed upwards to the sales manager. The advantage of this method is that individual salesmen can give consideration to the particular factors which are relevant in their areas.

(b) Mathematical analysis of past sales: Such analyses should indicate trends and seasonal variations. This information can be adjusted for known factors, such as increase advertising, to give a forecast of future sales.

(c) Senior management judgement: The senior management team, including production manager, administrative manager etc., will meet to discuss sales prospects. The approach brings a variety of skills and experience to the forecasting exercise.

BUDGETARY CONTROL

Budgetary control is also defined as 'the establishment of budgets relating the responsibilities of executive to the requirements of a policy, and the continuous comparison of actual with budgeted results either to secure by individual action the objective of that policy or to provide a basis for its revision.

Certain fundamental principles can be outlined from the above definitions of budgetary control:

(a) Establish a plan or target of performance which co-ordinates all the activities of the business; (b) Record the actual performance;

(c) Compare the actual performance with that planned;

(d) Calculate the differences or variances, and analyse the reasons for them

(e) Act immediately, if necessary, to remedy the situation.

THE OBJECTIVES OF BUDGETARY CONTROL

(a) To combine the ideas of all levels of management in the preparation of the budget;

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(b) To co-ordinate all activities of the business;

(c) To centralize control;

(d) To decentralize responsibility of each of the manager involved;

(e) To act as a guide for management decisions, when unforeseeable conditions affect the budget

(f) To plan and control income and expenditure so that maximum profitability is achieved

(g) To direct capital expenditure in the most profitable direction

(h) To ensure that sufficient working capital is available for the efficient operation of the business

(i) To provide a yardstick against which actual results can be compared;

(h) To show management which action is needed to remedy a situation.

THE ORGANISATION FOR BUDGETARY CONTROL

These include:

(a) The Preparation of an Organization Chart: This defines the functional responsibilities of each member of management and ensures that he knows his position in the company and his relationship to other members.

(b) The Budget Period is the time to which the plan of action relates. Period budgets cover a fixed period of time, most commonly one year. They will be divided into shorter time periods, known as: control periods, for purposes of reporting control.

c) Budget manual-The organization for budgeting [and budgetary control] should be documented in a budget manual, which has been described as a "procedure or rule book which 'sets out standing instructions governing the responsibilities of persons, and the procedures, forms and records relating to the preparation and use of budgets". (CIMA)

UNIT 6 STANDARD COSTING

A STANDARD COST

Standard cost is defined as the planned unit cost of the products, components or services produced in a period. The standard cost may be determined on a number of bases. The main uses of standard costs are in performance measurement control, stock valuation and in the establishment of selling prices.

STANDARD COSTING

This is a useful control technique based on the feedback control concept which ensures the determination of standard costs of products or services and compares them with the actual

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results and costs with the difference being referred to as a variance. This difference can be further explained by a process called variance analysis. The standard costing technique can be of use in a number of circumstances such as: where there is repetition of jobs and large production activities (process); service industries (hospital, merchandising) etc.

REASONS FOR ADOPTING A STANDARD COSTING TECHNIQUE

Some of the basic reasons for adopting a standard costing technique are:

a) To encourage management and employees, since it ensures that they have to plan ahead;

(b) To serve as the basis for quoting for jobs or fixing prices;

(c) To ensure that performance improvement measures are adequately guided;

(d) To provide the basis for setting budgets;

(e) To ensure that standards are put in place and variances properly analysed in order to control costs;

(f) To provide the basis for allocating duties in order to check inefficiencies or take advantage of opportunities;

DRAWBACKS/DISADVANTAGES OF THE TECHNIQUE

The following are the disadvantages of standard costing;

(a) Lack of understanding of its application could bring about resistance from the employees.

(b) Confidence of the users may be eroded, especially where they become outdated.

(c) The technique may be very expensive to operate especially where technicalities are involved and set-up time is elongated.

(d) It may not be appropriate for business use, if standard costs are not properly determined.

SETTING OF STANDARDS

The Types of Standards

Performance standards setting are a function of four basic standards:

(a) Ideal Standards: These are based on perfect operating conditions whereby there are no wastages, inefficiencies, idle-time, breakdown of machines etc.

(b) Basic Standards: These are standards which remained unaltered over a long span of time and they may become outdated as a result of changes in technology, laws, norms etc. They can only be used to express changes in the level of efficiency or performance over a period of time as well as the trend of prices from period to period.

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(c) Current Standards: They are based on current conditions of service or production, for example, current losses, inadequacies etc. However, they do not seem to bring about a higher current level of performance.

(d) Attainable/Expected Standards: They are a function of normal operating circumstances, thus ensuring that some allowances are available for losses, wastages, inadequacies, etc. They make for a challenging situation for employees in as much as psychological awareness is created.

Capacity Levels

(a) Full Capacity: It is the "production volume expressed in standard hours that could be achieved if sales order, supplier and workforce were available for all installed work places" (CIMA). Under this circumstance, full capacity can be related to ideal standards with the assumption that labour shortages, shortfall in supplies, equipment breakdown will not affect the smooth running of the production processes.

(b) Practical Capacity: This is "full capacity less an allowance for known unavoidable volume losses" (CIMA). Some examples of unavoidable losses are: repair time for equipment and plants, job resetting times, machine breakdown etc.

(c) Budgeted Capacity: It is the "standard hours planned for the period, taking into account budgeted sales, suppliers and workforce availability " (CIMA). In effect, it is the labour hours and machine hours required to have the budgeted units and can be a function of current standards that are not peculiar to normal practical capacity over an extended period of time.

d) Idle Capacity: This is the difference between the practical capacity and the budgeted capacity based on standard hours of output. This is the unutilized capacity that is not required, in that, the budgeted volume is less than the practical volume that could be achieved.

SHORTCOMINGS OF SETTING STANDARD COSTS

The shortcomings that can be associated with the setting of standard costs may include:

(a) The significant influence of quantity discounts and cyclical price changes that may make it difficult to determine the prices of materials.

(b) If it is desired to have a mix of the constituents parts of materials, it may be difficult to determine the proportion of the mix of the constituent parts of the materials.

(c) It may not be easy to come up with the appropriate wage efficiency standard.

(d) The manner of introducing the issue of inflation into predetermined unit costs is also a matter of concern.

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(e) Even though good materials may be expensive to obtain, the issue is how to determine the quality to be utilized per time may not be easy especially when there is the need to reduce material losses and spoilage

VARIANCE ANALYSIS

1 Basic Variances

The basic variances can be categorised under four main headings:

(a) Sales volume variance.

(b) Sales price variance.

(c) Variable cost variances, that is, direct materials; direct labour and variable overheads (which can also be sub-divided into spending and efficiency variances).

(d) Fixed overhead cost variances, that is, expenditure and volume variances (which can be further categorised into efficiency and capacity variances (which can also be sub-divided into capacity usage and fixed overhead idle-time variance).

COMPUTATION OF VARIANCES

Variances may be computed as follows:

(a) Material cost variances

The material cost variance shows the difference between the actual costs incurred and the standard costs. It is calculated as Standard cost less actual cost, that is, (SC - AC).

(i) Material price variance

This is derived by multiplying the difference between the standard price and actual price by the actual quantity of materials purchased. It is calculated as: Actual Quantity (Standard Price – Actual Price).This variance may occur because of:

- Material price changes.
- Reduction in supply of materials
- Ineffective purchasing policy.
- Non-availability of storage space.
- Insufficient funds.
- Purchasing mistakes.
- Reversal of specification standards.

(ii) Material usage variance

This is determined by multiplying the difference between the standard quantity and the actual quantity by the standard price of quantity used. The standard quantity is expressed as a

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function of the actual quantity produced at the standard specifications. It is calculated as SP (Standard Quantity – Actual Quantity)

The material usage variance can be sub-divided into mix and yield variances:

- Material Mix Variance — This can be computed by multiplying the difference between the standard specification of the material input and the actual mix used by the standard price. That is, SP (SM — AM).
- Material Yield Variance — This can be expressed as the difference between the standard yield and the actual yield from the materials used in production. That is, SC (AQSM - SQSM) or SP (SY-AY)

(b) Wage Cost Varian

Wage cost variance is the difference between the standard wage cost of actual output and the labour cost paid for. It is commonly separated into wage rate variance, an idle time variance and efficiency variance.

Wage Usage Variance - This is as a result of the difference between standard labour hours of actual output and the labour hours actually paid for multiplied by the standard rate per hour, that is, SR (SH - AH). The wage usage variance can be sub-divided into an idle time and efficiency variance.

Idle Time Variance — This is the difference resulting from hours lost through unexpected situations, such as machine breakdown, lack of materials or tools, etc. (unexpected idle time multiplied by standard hour).

Efficiency Variance – This is the variance resulting from the difference between the standard labour hours of actual output and the useful labour hours actually worked. This is represented by Standard Labour Cost of Actual output and standard cost of useful hours worked multiplied by the standard rate of pay; that is, SR (SH – AUH).

(c) Variable Overhead Variance

Variable overhead can be absorbed into production on the basis of units of output produced or standard hours used in production. Where standard hours are adopted as the strength for determining the level of activity, the variable overhead absorption rate can be computed as:

$$\text{OAR} = \frac{\text{Predetermined Variable Overhead}}{\text{Predetermined Standard Hours}}$$

Where the OAR = Overhead Absorption Rate

The variable overhead variance can be sub-divided into expenditure variance and efficiency variance.

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Expenditure Variance: This is as a result of the difference between actual cost and standard cost for the actual level of activity. It is to be taken that where the determination of level of activity is a function of the actual activity labour hours, the actual activity is the number of labour hours for which the work was performed. It is calculated as the difference between standard rate and actual rate multiplied by the actual hour.

Efficiency Variance: This is as a result of the difference in the labour hours worked and the standard hours equivalent of actual production, multiplied by the standard cost or rate. It is expected that the activity level will be measured in labour hours for the purpose of determining the variable overhead absorption rate. Its formula is SR (SH - AH).

(d) Fixed Overhead Variance

Fixed Overhead cost is a cost that will not change within a giver level of activity, but overhead absorption rate per unit will be charged to products, Nonetheless, it is normal to compute a budgeted fixed overhead absorption rate whenever product cost and valuation of stock are required.

$$\text{Fixed Overhead Absorption Rate (FOAR)}$$

$$= \frac{\text{Predetermined Fixed Overhead}}{\text{Predetermined Standard Hours}}$$

(i) Fixed Overhead Expenditure Variance - This is the difference between the actual and predetermined cost of overhead. The degree of spending on the fixed overhead is not affected by the volume of activity.

(ii) Fixed Overhead Volume Variance — This is the difference between the standard fixed overhead elements of actual output and the standard fixed overhead in the budget. Its formulae is given as SR (BR - SH).

(e) Sales Variance

A sales variance is used to give effect to the difference between budgeted sales and actual sales and can be further sub-divided into a sales price variance and sales volume variance. These variances may be related to sales profit or sales contribution, with the assertion that those related to profit or contribution ensure the provision of effective information.

(i) Sales Price Variance - This variance is used to determine the effect of selling output above or below the predetermined selling price. Its formulae is: AQ (SSP - ASP).

(ii) Sales Volume Variances - This variance is used to determine the effect on profit or contribution on selling more or less than the predetermined quantity. Its formulae is SP (BQ - A QS), where, BQ = budgeted quantity and AQS = actual quantity sold.

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Q. Explain the following:

i. The Balanced Scorecard and describe the four perspectives

The balanced scorecard is a performance measurement and reporting system that strikes a balance between financial and operating measures, links performance to rewards, and gives explicit recognition to the diversity of organizational goals. Balance scorecard is a set of measurement that gives top managers a fast but comprehensive view of the business. The balance scorecard includes both financial and operational measures that tell us how an organization has performed. Companies use the balanced scorecard to focus management's attention on items subject to action periodically.

In using the balanced scorecard, the managers will have to view performance from four different perspectives.

- Financial Perspective – how does the company look to the shareholders?
- Customer Perspective – how is the company seen by customers?
- Internal Perspective – how well does the company manage its internal processes?
- Innovative and learning Perspective – how can the company continue improving and creating value?

1 Financial Perspective

This shows how the company creates value for its owners. The owners being the shareholders will be concerned with several aspects of financial performance which include:

- Market share
- Cash flow
- Revenue growth
- Share price
- Profit ratio
- Profit growth

2 Customer Perspective

This looks at what customers value the most. Thus, the company can focus its performance targets on satisfying the customers more effectively. In order to meet the financial perspective targets, the customers should be satisfied so as to drive more sales. This aspect will look at things like:

- Customers service
- Responsiveness
- New products
- Customer Loyalty
- New markets
- Reliability

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3 Internal Perspective

In order to achieve it's financial and customers objectives, what processes must the company perform with excellence? So the company should focus on activities that are essential to satisfying the shareholders and customers. So the company will be focusing on things like:

- Improve core competence
- Quality performance
- Improvement in technology
- Inventory management
- Streamline processes
- Motivated workforce
- Manufacturing

4 Innovation and Learning Perspective

This is concerned on how the company can continue to improve and create value. The company will be focusing on how to improve the value already created while satisfying the shareholders and customers (financial and customers objectives). This will thus, help to sustain the customers too. So the company will be focusing on things like:

- New product development
- Continuous improvement
- Technological leadership
- HR development
- Product diversification

ii. SMART Performance Pyramid

The Strategic Measurement and Reporting Technique (SMART) performance pyramid builds on four levels that show the link between corporate strategy, strategic business units and operation. The first level defines the overall corporate vision which is translated into individual business unit objectives. Second level shows the short-term targets of cash flow and profitability and long term goals of growth and market position. The third level is business operating systems which consist of customer satisfaction, flexibility and productivity. The last level, which is the fourth level is the business unit and consists of four key performance measures (quality, delivery, cycle time and waste). The SMART performance pyramid is a balanced model which measures stakeholder satisfaction such as customer satisfaction, quality and delivery. It also measures the operation activity for example, productivity and lead time. The main strength of the SMART performance pyramid is that it provides a link between corporate objectives with operational performance indicators

iii. Building Blocks

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This model is mostly suitable for service industries. The building blocks are grouped into three:

- Dimensions
- Standard
- Reward

Dimensions

These are areas of the business that have to be monitored and controlled if business goals are to be achieved. These dimensions can be further subdivided into two:

- Determinants
- Results

IMPORTANCE AND SHORTCOMINGS OF PLANNING AND OPERATIONAL VARIANCES

(a) Ensures an orderly manner of reviewing standards as well as the associated basis for setting them up.

(b) Prompts the realistic nature of standard costing and variance analysis, especially where circumstances change and are drastic.

(c) Ensures the usage of updated information, especially in the operational variances adopted for determining present levels of efficiency.

(d) Since standard costing as a technique is realistic and informative, its acceptability will be on the high side and encourage motivation.

(e) Since the planning efforts are enhanced, problem areas can be easily identified and actions takes as at when due.

THE SHORTCOMINGS OF THE VARIANCES

(a) The responsibility centres may experience some form of pressure especially where interpretation are involved in terms of controllable and uncontrollable activities or internal or external factors affecting planning and operating duties.

(b) The determination and updating of additional variances entail many clerical and managerial efforts on a continuous basis.

(c) The determination of the ex-post element may be subjective, hence resulting in the allotment of the planning and operational causal factors being political in nature.

CONTROL RATIOS

A standard hour is a measure of the work content in an hour and not that of time involved or taken to produce. For example, if 500 units of a product should be produced in one hour, then

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output of 2000 units is equivalent to 4 standard hours. Therefore, the relationship between standard hours and actual production can be expressed as control rations. These are used to show the degree of efficient or inefficient utilization of resources at the disposal of management.

The following ratios can be computed:

(a) Activity Ratio

This ratio compares the actual level of production with the planned level of production. It can be expressed as:

$$\frac{\text{Standard hours equivalent of actual production}}{\text{Budgeted hours}} \times 100$$

(b) The Efficiency Ratio

The ratio measures the efficiency with which production has been achieved. Actual time taken to achieve the actual production is compared with the time such production should have taken. The efficiency ratio can be expressed as:

$$\frac{\text{Standard hours equivalent of actual production}}{\text{Actual hours worked}} \times 100$$

(c) The Capacity Ratio

This ratio assesses the utilization of the available capacity by comparing actual hours worked with budgeted hours.

$$\frac{\text{Actual hours worked}}{\text{Budgeted hours}} \times 100$$

CALCULATION OF PLANNING AND OPERATIONAL VARIANCES

In calculating planning and operational variances, we have to understand the following terms:

(a) Ex-Ante: this is the first target set.

(b) Ex-Post: this is the later situation during the year or immediately which were not foreseen during the first target (Budget);

(c) Actual Result: this is actual result at the end of the period.

Planning Variances = Ex-Ante – Ex-Post

Operational Variances = Ex-Post – Actual Result

Planning variances are those variances which are not within the control of management (Uncontrollable).

Operational variances are variances which are controllable by the management. Planning variances may be due to the following:

(a) New government policy on importation

(b) New government policy on taxation

(c) Inflation

DEFINITION OF MARGINAL COSTING

CIMA defines marginal costing "as a decision making technique used to determine the effect of cost on changes in the volume of time and output in a multi-product firm especially in the short run". Thus, it is a technique which emphasizes the variable cost of a product, that is, the direct material, direct labour, direct expenses and other variable overheads. It demands that fixed costs of the relevant periods are written off in full against the contribution. The contribution is the difference between the sales value and the variable or marginal cost of a product in a given period of time.

MARGINAL COSTING STATEMENT FORMAT

The format showing the components of a marginal costing statement:

	N	N
Sales (a)		x
Direct material	x	
Direct labour	x	
Direct expenses	x	
Prime cost	x	
Production variable costs	x	
Production marginal cost (b)		x
Contribution - (a-b)		x

MERITS OF MARGINAL COSTING

Marginal costing is a technique which is of utmost importance to management decision making efforts. The following reasons are pertinent to this assertion:

(a) Profit volume ratio helps management to decide which products are most profitable

(b) Contribution margin helps to decide whether:

(i) To accept or reject a special order;

(ii) To close down a line of product or business;

(iii) To determine product profitability;

(iv) To determine product mix using linear programming technique;

(v) To make or buy or lease decisions on an item of plant and equipment; and

(vi) To decide further processing decision particularly in relation to joint product cost.

(c) It assists in the pricing decision making process.

(d) Contribution approach can be used to forecast the units to be produced and sold.

(e) It facilitates the stock valuation for final accounts purposes.

DEMERITS OF MARGINAL COSTING

The difficulties associated with marginal costing are as follows:

(a) The analysis of costs into fixed and variable costs may be subjective for the purpose of costs classification.

(b) It places emphasis on the short run effects of costs, whereas, fixed costs will vary in the medium and long term.

(c) It is impossible to determine strategic or long term decision in that, giving a product total cost data, it needs to be noted that in the final analysis (long run) fixed costs must be recovered.

(d) It focuses attention on the contribution level and the tendency to exclude fixed costs by the management may be disastrous.

ABSORPTION COSTING

Absorption costing is a method of costing stocks in which all production costs such as variable and fixed are included as part of the cost of items'. (Statement of Accounting Standard, No. 4). Absorption costing, therefore, is a technique in which all costs are absorbed into production cost, hence operating statements, prepared using this approach, does not distinguish between fixed and variable cost. It is an approach which allocates all production costs into individual products. Fixed production overhead are absorbed into products by establishing overhead absorption rate. This may result to over or under absorbed overhead, which is less or more than recovery of fixed overheads at planned or predetermined activity level.

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1 (a) Absorption costing standard cost (where there is no opening and closing stock) card-format

	PER UNIT ₦	₦
Sales		x
Direct Materials	x	
Direct Labour	x	
Direct Expenses	x	
Prime Cost	x	
Production Variable Overhead	x	
(i) Marginal Cost	x	
Fixed Production overhead cost	x	
(ii) Total production cost of sales		

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ADVANTAGES OF ABSORPTION COSTING

(a) It does not undermine the importance of fixed cost.

(b) It avoids fictitious losses being reported by representing product cost at full factory cost to bring the product to a point that its ready for use.

(c) It assists in arriving at total cost of production which is a basis for selling price decision process.

(d) It matches costs with revenues since fixed production cost are considered in the product cost.

(e) It represents current market trends and, therefore, it is widely accepted especially for tax purposes.

DISADVANTAGES OF ABSORPTION COSTING

(a) It does not help in decision-making.

(b) Production may be very difficult since there is element of fixed cost in the product cost.

(c) Calculation of under or over absorbed overhead may be problematic.

(d) It overbears the product cost with management administrative inefficiency which may partly be represented in fixed cost.

(e) It does not conform with the matching principle which stipulates that all costs (fixed and variable) must be matched against revenue in the period concerned for determination of profit.

MARGINAL AND ABSORPTION COSTING COMPARED

Marginal Costing

Marginal Costing is a useful technique for studying the effects of changes in volume and type of output in a multi-product business. It is an accounting technique which determines the marginal cost by distinguishing between fixed and variable costs. The primary purpose of marginal costing is to provide information to management on the effects on costs and revenues of changes in the volume and type of output in the short run.

Absorption costing

Absorption costing is the approach used in all published accounts, and all financial accounting statements. It emphasizes a functional classification of costs, for example manufacturing, selling and distribution and financial costs. In contrast, marginal costing, or the contribution approach, highlights the behaviour of costs and classifies them accordingly, by identifying variable costs and fixed costs.

Further distinctions between the two techniques are presented in tabular form below:

Marginal Costing and Absorption Costing Techniques:

Marginal Costing	Absorption Costing
a. Fixed overheads are written off in a period. Treated as period costs	Fixed overhead are: a. Absorbed into production, such that part of fixed cost is carried to subsequent year by way of its inclusion in closing stock.
(b) Only variable costs are regarded as product cost	(b) Fixed production overheads form part of the product cost.
(c) Contribution is the main feature of the operating statement (sales less marginal cost = Contribution	(c) Contribution are treated as funds in which fixed cost are absorbed to arrive at profit.
(d) Distinction is made between fixed and variable costs.	(d) No distinction is made between fixed and variable costs.
(e) Stocks are valued at variable costs which exclude fixed costs.	(e) Stocks are valued at total production cost including fixed production overhead costs.
(f) It is used for decision making purposes.	(f) It is used for routine purposes.

MARGINAL COSTING AND DECISION MAKING

Decision making is defined as making choices between future and uncertain alternatives. It must be emphasized that all decision making relates to the future and that a decision is a choice between alternatives in pursuit of an objective. Where no alternatives exist, no decision can be made and nothing can be done now that will alter the past.

THE DECISION PROCESS

The overall decision process can be subdivided into stages:

(a) determination of objective(s)

(b) consideration of alternatives

(c) evaluation of alternatives in the light of the objective(s)

(d) selection of the course of action

THE TYPES OF DECISIONS

(a) Routine planning decisions - These relate to budgeting decisions whereby fixed and variable costs are analysed together with revenues over a period.

(b) Short-run problem decisions - These refer to unforeseen decisions of a nonrecurring nature, so that revenue and costs are obtained within a relatively short time.

(c) Investment or disinvestments decisions - These refer to decision of long-term consequences. It allows for the concept of time value of money and the appreciation of discounted cash flow techniques.

(d) Long-range decisions - These relate to an infrequently reviewed decisions. They are decisions made once, meant to provide a continuing solution to a recurring problem, for example, deciding, or reviewing the channel of distribution of the company's products.

(e) Control decisions - That is, these are cautious decisions with a view to evaluate the benefits expected such that they exceed the costs of investigation. It is more like "think before you act" circumstances.

RELEVANT COST

Any cost that is useful for decision making is often referred to as a relevant cost. A cost is s aid to be relevant provided there is a future cash flow arising from a direct consequence of a decision. A relevant cost is one which arises as a direct consequence of a decision.

DIFFERENTIAL COSTING

This is a term used in the preparation of adhoc information when all the cost and income differences between the various options being considered are highlighted so that clear

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comparisons can be made of all the financial consequences. In one sense, differential costing is a wider concept than marginal costing because all cost changes are considered, both fixed and variable, whereas the presumption when marginal cost is used is that only variable cost changes.

KEY BUDGET FACTOR / LIMITING FACTOR

Key budget factor sometimes known as a limiting factor or principal budget factor is a factor which is a binding constraint upon the organization, that is, the factor which restricts indefinite expansion or unlimited profits. It may be sales, availability of finance, skilled labour, supplies of material or lack of space. Where a single binding constraint can be identified, then the general objective of maximizing contribution can be achieved by selecting the alternative which maximizes the contribution per unit of key factor. It will be apparent that from time to time, the key factor in an organization will change. For example, a firm may have a shortage of orders. It overcomes this by appointing salesmen and then finds that there is a shortage of machinery capacity. The expansion of the productive capacity may introduce a problem of lack of space and so on.

COST-VOLUME-PROFIT (CVP) ANALYSIS

Cost-Volume-Profit Analysis otherwise known as Break-Even Analysis refers to a technique that assists in decision making by employing the marginal costing concept and is used to measure the effect on profit as a result of changes in volume of activities, cost and prices. It also facilitates planning in the sense that CVP analysis could assist to predict future cost levels and sales as related to a range of level of activity. It demonstrates how the profit will be affected as a result of changes in any of the variables that make up the profit function. Its use requires the separation of the total cost function into their, variable and fixed portion, as required in the application of marginal costing principles.

Basic Assumptions of CVP-Analysis

The basic assumptions associated with CV P technique are:

(a) All costs could be categorized as either variable cost or fixed cost.

(b) Semi-Variable cost can be segregated into both the variable and its fixed component.

(c) Selling price per unit is constant. (d) Variable cost per unit is constant.

(e) Total fixed cost remains unchanged regardless of output.

(f) Parity of production and sales.

Limitations of the Basic Assumptions

The basic assumptions of C-V-P have the following deficiencies:

a) It might be difficult to separate some costs into their fixed and variable cost portions.

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(b) The selling price per unit is assumed to be constant. This is not realistic because of possibility of discounts.

(c) The variable cost per unit is assumed to be constant. This is not realistic because quantity discount could result in decrease in material cost and labour cost per unit could fall whenever the learning curve theory becomes applicable.

(d) Fixed cost is assumed to remain unchanged. This is not true because in reality, fixed cost moves in a step-like manner. Also in the long run all costs are variable.

(e) It is assumed that production is equal to sale, hence no closing stock. This assumption looks unrealistic because a business is a going concern and invariably stocks are carried from one period to the other.

(f) The assumption of one product or constant mix of product is not realistic because most organizations produce variety of products and invariably actual mix turn out to be radically different from the expected level of activity.

Q. What are the formulae for: break-even point (units); break-even point (sales value)

(a) To determine the breakeven point in units

$$= \frac{\text{Total Fixed Cost (TFC)}}{\text{Contribution per unit or Contribution Margin (CM)}}$$

$$= \frac{\text{TFC}}{\text{CM(Units)}}$$

(b) Break even point in sales value (₦)

$$= \frac{\text{Total fixed cost}}{\text{Contribution margin ratio}}$$

(c) Number of units to sell to make a targeted profit (₦)

$$= \frac{\text{TFC + Targeted profit}}{\text{CM(Units)}}$$

(d) The sales value in N required to achieve a targeted profit

$$= \frac{\text{TFC +Targeted profit}}{\text{CMR}}$$

Q. Explain the term "Opportunity Cost"

Opportunity cost is the value of benefit sacrificed in favour of an alternative course of action. It is the maximum amount that could be obtained at any given point in time if a resource was sold or put to the most valuable alternative use that would be practicable. Opportunity cost of goods or services is measured in terms of revenue which could have been earned by employing that goods or services in some other alternative uses. Opportunity cost of goods or services is measured in terms of revenue which could have been earned by employing that goods or services in some other alternative uses. Relevant cost may also be expressed as opportunity costs. An opportunity cost is the benefit of the next best alternative that is forgone.

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