CLASSIFICATIONS AND APPROACHES TO COST ACCOUNTING

1.1 Concept of cost

Cost is a fundamental economic concept that refers to the value of resources, both monetary and non-monetary, that must be sacrificed or expended to acquire a good or service, achieve a goal, or undertake a particular action. Costs are a central consideration in business, economics, and decision-making processes, as they play a crucial role in determining profitability, resource allocation, and efficiency. Here are some key aspects of the concept of cost:

1. Types of Costs:
    - Fixed Costs: These are costs that remain constant regardless of the level of production or output. Examples include rent, salaries, and insurance premiums.
    - Variable Costs: These costs change in proportion to the level of production or output. Examples include raw materials, labor, and electricity.
    - Total Costs: The sum of fixed and variable costs.
    - Marginal Cost: The additional cost incurred by producing one more unit of a good or service.
2. Opportunity Cost: This represents the cost of forgoing the next best alternative when making a decision. It is not always monetary but can also involve time, resources, or benefits that could have been gained from an alternative choice.
3. Sunk Costs: These are costs that have already been incurred and cannot be recovered. They should not influence future decision-making, as they are irrelevant to current and future costs.
4. Explicit Costs vs. Implicit Costs:
    - Explicit Costs are direct, out-of-pocket expenses that a business incurs, such as rent, wages, and material costs.
    - Implicit Costs are the opportunity costs associated with using resources the business already owns, like the owner's time and capital invested, which could be used elsewhere.
5. Total Cost vs. Average Cost:
    - Total Cost is the sum of all costs incurred in a particular activity.
    - Average Cost is the total cost divided by the quantity of goods or services produced. It provides insights into the cost efficiency of production.
6. Economies of Scale: As production levels increase, per-unit costs may decrease due to factors such as increased specialization and better utilization of resources. This phenomenon is known as economies of scale.
7. Cost-Benefit Analysis: This is a method of comparing the costs and benefits of a decision or project to determine whether the benefits outweigh the costs. It is often used in business, public policy, and investment analysis.
8. Marginal Cost and Revenue: In many decision-making contexts, it's important to compare the marginal cost (additional cost) with the marginal revenue (additional revenue) to determine the optimal level of production or pricing.

Understanding costs and their relationship to revenue and decision-making is crucial in economics and business. Proper cost analysis helps businesses optimize their operations, set prices, make informed investment decisions, and improve overall financial performance.

1.2 Elements of cost

The elements of cost, also known as cost components or cost factors, represent the various components that make up the total cost of producing a product, providing a service, or conducting a business activity. These elements help organizations analyze, manage, and control their expenses. The specific elements of cost may vary depending on the industry, but the following are some common elements:

1. **Direct Materials**: These are the raw materials or components that are directly used in the production of a product. For example, in the automotive industry, direct materials would include steel, rubber, and plastic for making cars.
2. **Direct Labor**: This includes the wages or salaries of employees who are directly involved in the production process. It covers the cost of the time and labor needed to manufacture a product or provide a service.
3. **Indirect Materials**: These are materials that are not directly incorporated into the final product but are still essential for production. Indirect materials may include items like lubricants, cleaning supplies, or maintenance tools.
4. **Indirect Labor**: Indirect labor costs pertain to the compensation of employees who support the production process but are not directly involved in the actual manufacturing. This includes supervisors, maintenance workers, and administrative staff.
5. **Factory Overhead**: Factory overhead, also known as manufacturing overhead, consists of all other production-related expenses that are not directly tied to materials or labor. It includes items such as rent for the manufacturing facility, utilities, depreciation of machinery, and maintenance costs.
6. **Utilities and Energy**: These costs cover expenses related to electricity, water, gas, and other energy sources required for the production process and general operations.
7. **Depreciation**: This element represents the gradual decrease in the value of long-term assets, such as machinery and equipment, used in production. Depreciation is included to allocate the cost of these assets over their useful life.
8. **Taxes and Insurance**: Businesses often incur costs for property taxes, liability insurance, and other related expenses to protect assets and comply with legal requirements.
9. **Rent and Lease Costs**: This includes expenses associated with renting or leasing facilities, equipment, or vehicles required for the business.
10. **Research and Development (R&D) Costs**: R&D expenses are incurred when a company invests in research, design, and development activities to create new products or improve existing ones.

11. **Marketing and Advertising Costs**: These expenses encompass the resources spent on advertising campaigns, promotional activities, and marketing materials to promote products or services.
12. **Administrative Expenses**: These are the general costs of running the business, such as salaries of non-production staff, office supplies, and administrative overhead.
13. **Interest Costs**: Interest expenses result from borrowing money or financing operations through loans or credit lines. Interest payments can be a significant element of cost, particularly for highly leveraged businesses.
14. **Taxes and Duties**: Costs related to various taxes, import/export duties, and fees imposed by governments, which can significantly impact the overall cost structure.
15. **Waste and Spoilage Costs**: These are costs associated with the loss or waste of materials or products during the production process, including scrap, defects, or unsellable items.
16. **Quality Control and Inspection Costs**: Expenses related to ensuring the quality and integrity of products, which may include testing, inspections, and quality control personnel.

Note Understanding and analyzing these elements of cost is essential for businesses to manage their expenses, make informed pricing decisions, optimize operations, and ultimately maximize profitability. Proper cost management can lead to more efficient resource allocation and better financial performance.

1.3 Cost Classifications

Cost classification refers to the process of grouping costs according to their common characteristics, such as nature of expense, function, variability, controllability, and normality. Cost classification can be done on the basis of time, their relation with the product, and the accounting period.

Cost classifications involve categorizing various expenses and expenditures in a way that helps organizations track, analyze, and manage their costs more effectively. The way costs are classified can vary based on the specific needs of a business, industry, or accounting method

Cost classification is also made for planning control and decision-making. Thus, classification is essential for identifying costs with cost centres or cost units for the purpose of determination and control of cost:

- *By nature of expenses***:** Costs can be classified into material, labour, and expenses as explained earlier.
- *By function***:** Costs are classified, as explained earlier, into production or manufacturing costs, administration costs, selling and distribution costs, and research and development costs.

- Production cost begins with the process of supplying material labour and services and ends with the primary packing of the finished product.
- Administration cost is the aggregate of the costs of formulating the policy, directing the organization, and controlling the operations of an undertaking, which is not related directly to production, selling, distribution, research and development activity, or function.
- Selling cost refers to the expenditure incurred in promoting sales and retaining customers.
- Distribution cost begins with the process of making the packed product available for dispatch and ends with making the reconditioned returned empty package available for reuse.
- Research and development cost relates to the costs of researching for new or improved products, new applications of materials, or new or improved methods, processes, systems or services, and also the cost of implementation of the decision including the commencement of commercial production of that product or by that process or method.
- Pre-production cost refers to the part of development cost incurred in making trial production run preliminary to formal production, either in a new or a running factory. In a running factory, this cost often represents research and development costs. Pre-production costs are normally considered as deferred revenue expenditure and are charged to the cost of future production.

- *By variability*: Costs are classified into fixed, variable and semi-fixed / semi-variable costs according to their tendency to vary with the volume of output.
  The cost which varies directly in proportion with every increase or decrease in the volume of output or production is known as variable cost. Some of its examples are as follows:

a) Wages of labourers
b) Cost of direct material
c) Power

The cost which does not vary but remains constant within a given period of time and a range of activity in spite of the fluctuations in production is known as fixed cost. Some of its examples are as follows:

a) Rent or rates
b) Insurance charges
c) Management salary

The cost which does not vary proportionately but simultaneously does not remain stationary at all times is known as semi-variable cost. It can also be named as semi-fixed cost. Some of its examples are as follows:

a) Depreciation
b) Repairs

Fixed costs are sometimes referred to as "period costs" and variable costs as "direct costs" in system of direct costing. Fixed costs can be further classified into:

a) Committed fixed costs
b) Discretionary fixed costs

a) **Committed Fixed Costs:** Committed fixed costs are those fixed costs that a company must incur because of its previous decisions or commitments. These costs are typically long-term in nature and cannot be easily adjusted in the short term. Committed fixed costs do not change with fluctuations in production levels or sales. They are often associated with a company's long-term strategic decisions and investments. Examples of committed fixed costs include:

- **Depreciation:** The cost of capital assets like buildings and machinery that have been acquired for long-term use.
- **Rent:** Lease or rental payments for facilities, equipment, or land that are under long-term contracts.
- **Salaries and Wages:** The salaries of permanent staff members, which are generally not easily reduced, and long-term employment contracts.
- **Loan Repayments:** The regular payments on loans and interest that a company has committed to.

 Discretionary Fixed Costs**:**

Discretionary fixed costs are those fixed costs that a company chooses to incur, and they can be adjusted or eliminated relatively easily based on management decisions. These costs are often associated with short-term or discretionary spending decisions, and they are more flexible compared to committed fixed costs. Examples of discretionary fixed costs include:

- **Advertising and Marketing Expenses:** Companies can choose to increase or decrease their advertising and marketing budgets depending on their current financial situation and business objectives.
- **Employee Training and Development:** Training programs for employees can be adjusted according to business needs.
- **Research and Development Costs:** The amount spent on research and development projects can be altered based on company strategies and financial constraints.
- **Charitable Contributions:** Companies can decide to increase or decrease their contributions to charitable organizations.

- ***By controllability*:** Costs can be classified under controllable cost and uncontrollable cost.

— Controllable cost can be influenced by the action of a specified member of an undertaking.
— Uncontrollable cost cannot be influenced by the action of a specified member of an undertaking.

1.4 Cost Estimation Methods

Mixed costs, also known as semi-variable costs, consist of both fixed and variable cost elements. These costs are not purely fixed (constant regardless of activity) or purely variable (directly proportional to activity). Instead, they include a fixed component and a variable component, which means they partially vary with changes in activity levels.

Separating the fixed and variable components of mixed costs is important for budgeting, cost analysis, and decision-making. There are various methods to separate mixed costs into their fixed and variable portions, including:

1. **High-Low Method**:
   - The high-low method involves identifying the highest and lowest levels of activity (e.g., production units, service hours) and the corresponding total costs.
   - The variable cost per unit of activity is calculated as the change in total cost between the high and low activity levels divided by the change in activity.
   - The fixed cost component is then calculated by subtracting the variable cost component from the total cost at either the high or low activity level.

   The formula for variable cost per unit: Variable Cost per Unit = (Total Cost at High Activity - Total Cost at Low Activity) / (High Activity Level - Low Activity Level)

   Fixed Cost = Total Cost - (Variable Cost per Unit × Activity Level)

2. **Scatter graph (Visual Fit) Method**:
   - In the scatter graph method, historical data is plotted on a graph with activity levels on the X-axis and total costs on the Y-axis.
   - The data points are scattered across the graph, and a line (best-fit line or regression line) is drawn that represents the relationship between activity and cost.
   - The slope of the line represents the variable cost per unit, and the intercept with the Y-axis represents the fixed cost component.
3. **Least-Squares Regression Analysis**:
   - This method involves using statistical techniques to find the best-fit line that minimizes the sum of the squared differences between the observed data points and the estimated line.
   - The equation of the regression line provides estimates for both the fixed and variable cost components.

- The formula of the regression line is usually in the form: Total Cost = Fixed Cost + (Variable Cost per Unit × Activity Level).

4. **Account Analysis**:
   - Account analysis is a subjective method that relies on the judgment and expertise of accountants or financial analysts.
   - Analysts review the cost accounts and classify each cost as either fixed or variable based on their knowledge and understanding of the cost behavior.

Tutorial Questions

1. What are the three major elements of product costs in a manufacturing company?

2, distinguish between the following

(a) Direct materials
(b) Indirect materials
(c) Direct labour
(d) Indirect labour
(e) Manufacturing Overheads

3 Explain the difference between a period cost and a product cost

4 Why is production overhead considered an indirect cost of a unit of product?

5 Define the following terms: differential costs, opportunity cost, and sunk costs

6 only variable costs can be differential costs. Do you agree? Explain

7. Distinguish between 'opportunity cost' and 'out-of-pocket cost' giving a numerical example of each using your own figures to support your answer.

8 Discretionary costs are troublesome because managers usually find it difficult to separate and quantify the results of their use in the business, as compared with variable and other fixed costs.'

You are required to discuss the above statement and include in your answer the meaning of discretionary costs, variable costs, and fixed costs; give two illustrations of each of these three named costs.

9 (a) A drug company has initiated a research project which is intended to develop a new product. Expenditures to date on this particular research total $500 000 but it is now estimated that a further $200 000 will need to be spent before the product can be marketed. Over the estimated life of the product, the profit potential has a net present value of $350 000.

You are required to advise management whether they should continue or abandon the project. Support your conclusion with a numerate statement and state what kind of cost is the $500 000.

(b) Opportunity costs and notional costs are not recognized by financial accounting systems but need to be considered in many decisions taken by management.

You are required to explain briefly the meanings of opportunity costs and notional costs; give two examples of each to illustrate the meanings you have attached to them.

(c) James travels to work by train to his 5-days a week job. Instead of buying daily tickets he finds it cheaper to buy a quarterly season ticket which costs $188 for 13 weeks.