



**UNIVERSITY COLLEGE OF ENGINEERING
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DEPARTMENT OF CIVIL ENGINEERING

**GE1451 ENGINEERING ECONOMICS AND COST ANALYSIS
IMPORTANT QUESTION WITH ANSWER**

VOLUME-I

1. What is marginal cost pricing?

Marginal cost is a production and economics calculation that tells you the cost of producing additional items. You must know several production variables, such as fixed costs and variable costs in order to find it.

2. What is capital budgeting?

Capital budgeting is a process used by companies for evaluating and ranking potential expenditures or investments that are significant in amount. The large expenditures could include the purchase of new equipment, rebuilding existing equipment, purchasing delivery vehicles, constructing additions to buildings, etc. The large amounts spent for these types of projects are known as capital expenditures.

3. What is payback period?

Payback period is the time in which the initial cash outflow of an investment is expected to be recovered from the cash inflows generated by the investment. It is one of the simplest investment appraisal techniques.

The formula to calculate payback period of a project depends on whether the cash flow per period from the project is even or uneven. In case they are even, the formula to calculate payback period is:

$$\text{Payback Period} = \frac{\text{Initial Investment}}{\text{Cash Inflow per Period}}$$

When cash inflows are uneven, we need to calculate the cumulative net cash flow for each period and then use the following formula for payback period

4. What is NPV?

The difference between the present value of the future cash flows from an investment and the amount of investment. Present value of the expected cash flows is computed by discounting them at the required rate of return.

5. What is bid pricing?

The bid price represents the maximum price that a buyer or buyers are willing to pay for a security.

6. What is feasibility?

A feasibility study looks at the viability of an idea with an emphasis on identifying potential problems the information you gather and present in your feasibility study will help you:

- List in detail all the things you need to make the business work;
- Identify logistical and other business-related problems and solutions;
- Develop marketing strategies to convince a bank or investor that your business is worth considering as an investment; and

- Serve as a solid foundation for developing your business plan.

7. How to preparation of feasibility report?

A feasibility study may be necessary for a variety of projects, including many business studies for the expansion or continued operation of a company or small business, as well as other types of proposed projects like public works initiatives.

8. What is the relationship between marginal cost and average cost?

The relationship between MC AND AC is exactly of the similar nature. The relation between this MC AND AC is more a mathematical one rather than economics. Because of the small output MC and AC must be the same

9. What is the difference between fixed cost and variable cost.

Fixed cost remains fixed irrespective of the level of output ex. Rent salaries, insurance etc.

Variable cost- this cost varies with the volume of output ex- direct material, direct labour, direct expenses, selling commission etc.

10. What are the elements of cost?

There are broadly three elements of cost - (1) material, (2) labour and (3) expenses.

Direct Material: All materials which become an integral part of the finished j product, the cost of which are directly and completely assigned to the specific physical units and charged to the prime cost, are known as direct material. Direct labour is all labour expended and directly involved in altering the condition, composition or construction of the product. Direct Expenses: Expenses which are specifically incurred and can be directly and wholly allocated to a particular product, job or service are termed as 'direct expenses'

11. What is meant by opportunity cost?

Opportunity cost of a factor refers to its value in its next best alternative use. Opportunity cost is also known as transfer earnings on the foregone alternatives.

12.. State the factors influencing pricing decisions.

- a) Cost of manufacturing
- b) Objectives and polices of management
- c) Demand of the product
- d) Distribution strength of the firm

13.. List three semi variables costs.

- a)electricity charges
- b) Telephone charges
- c) Depreciation
- d)maintenance expenses

part-B

1. Explain the classification costing.

Classification of cost

Classification according to nature or element

Classification according to function

Classification to variability- fixed cost, variable cost, semi variable cost

Classification according to normality'-normal cost, abnormal cost

Classification according to controllability- controllable cost, uncontrollable cost

Classification by time- historical cost, predetermined cost

Classification according to managerial decision-marginal cost, differential cost, replacement cost

Classification according to capital and revenue

Classification by association with products

2. Explain the cost output relationship.

This cost output relation in economics termed as cost function of two types- short run cost, long run cost function.

Short run cost – output relationship- average fixed cost, average variable cost, average total cost.(include graphical representation write)

Long run cost output relationship- a firm can change the fixed factors plants, equipment and thereby enlarge the scale operation and produce more output in the most efficient way.

3. Explain their pricing practice.

4. Explain the feasibility studies.

5. A company has to select one of the following two projects

Year	0	1	2	3	4
Project x	11,000	6,000	2,000	5,000	1,000
Project y	10,000	1,000	1,000	10,000	2,000

Calculate IRR.

Ans PROJECT X IRR-11.27%,PROJECT Y – 10.24%

6. Compute the comparative profitability of the proposal under pay back method ignores income tax.

Particulars	Automatic machine	Ordinary machine
Initial investment	2,24,000	60,000
Life	5 .5 YEARS	8 YEARS
Sales	1,50,000	1,50,000
Material	23,000	55,000
Labour	22,000	43,000
Variable overheads	18,000	25,000

Calculate payback period method

Ans-Pay back method automatic machine (RS. 1,28,000)

PAY back method ordinary machine (Rs. 1, 00,000)(Refer in ur book)

6. Write short notes on(16)
- Traditional costing approach
 - Activity based costing

- c) Marginal costing
- d) Cost output relationship.

7. Project X initially Rs.25000. It generates the following cash flow.

Year	Cash Flow	Present Value of Re.1 at 10%
1	Rs.9000	0.909
2	Rs.8000	0.826
3	Rs.7000	0.751
4	Rs.6000	0.683
5	Rs.5000	0.621

Taking the cut-off rate as 10% suggest whether the project should accepted or not

Solution:

Year	Cash Inflow	Present Value of Re.1 at 10%	Present Value Cash Inflow
1	Rs.9000	0.909	8181
2	Rs.8000	0.826	6608
3	Rs.7000	0.751	5257
4	Rs.6000	0.683	4098
5	Rs.5000	0.621	3105

Total Present Value of Cash Inflow	27,249
Total Present Value Cash Outflow (Investment)	25,000
	2249

As Net present value is positive, the project is recommend

8. Internal Rate of Return (IRR)

Initial Investment Rs.60000

Life of the asset 4 years

Estimated net annual cash flow:

I year	Rs.15,000
II year	Rs.20,000
III Year	Rs.30,000
IV Year	Rs.20,000

Calculate Internal Rate of Return

year	P.V factor at 10%	P.V factor at 12%	P.V factor at 14%	P.V factor at 15%
1	0.909	0.892	0.877	0.869
2	0.826	0.797	0.769	0.756
3	0.751	0.711	0.674	0.657
4	0.683	0.635	0.592	0.571

Solution:

Cash Flow Table at various discount rates 10%, 12%, 14%, & 15%

Year	Annul Cash Inflow (RS)	Discount Rate 10%		Discount rate 12%		Discount rate 14%		Discount rate 15%	
		P.V.F	P.V.F RS	P.V.F	P.V.F RS	P.V.F	P.V.F RS	P.V.F	P.V.F RS

1	15,000	0.909	13635	0.892	13380	0.877	13155	0.869	13035
2	20,000	0.826	16520	0.797	15940	0.769	15380	0.756	15120
3	30,000	0.751	22530	0.711	21330	0.674	20220	0.657	19710
4	20,000	0.683	13660	0.635	12700	0.592	11840	0.571	11420
Total Present Value Of cash Inflow			66345		63350		60595		59285

Internal rate of return =14.45%

Working:

At internal rate of return , total present value of cash inflow is equal to initial investment. Initial investment . Initial investment is Rs.60000. hence internal rate of return must be in between 14% and 15% (ie between Rs.60595 and Rs.59285) The exact internal rate of return is calculated as follows:

For a difference of 1310 difference rate =1%

For a difference of 595 difference rate =?

$$\begin{aligned}
 & \text{(60595-60000)} \\
 & = 595/1310 * 1\% = 0.45\% \\
 & \text{IRR} = 14\% + 0.45\% = 14.45\%
 \end{aligned}$$

9..What are the type of Costing?

1. Uniform Costing

When a number of firms in an industry agree among themselves to follow the same system of costing in detail, adopting common terminology for various items and processes they are said to follow a system of uniform costing. In such a case, a comparison of the performance of each of the firms can be made with that of another, or with the average performance in the industry. Under such a system it is also possible to determine the cost of production of goods which is true for the industry as a whole. It is found useful when tax-relief or protection is sought from the Government.

2. Marginal Costing:

It is defined as the ascertainment of marginal cost by differentiating between fixed and variable costs. It is used to ascertain effect of changes in volume or type of output on profit.

3. Standard Costing and variance analysis

It is the name given to the technique whereby standard costs are pre-determined and subsequently compared with the recorded actual costs. It is thus a technique of cost ascertainment and cost control. This technique may be used in conjunction with any method of costing. However, it is especially suitable where the manufacturing method involves production of standardized goods of repetitive nature.

4. Historical Costing

It is the ascertainment of costs after they have been incurred. This type of costing has limited utility.

5. Direct Costing

It is the practice of charging all direct costs to operations, processes or products leaving all indirect costs to be written off against profits in which they arise.

6. Absorption Costing

It is the practice of charging all costs, both variable and fixed to operations, processes or products. This differs from marginal costing where fixed costs are excluded.
