Maulana Abul Kalam Azad University
of Technology, West Bengal

Utech

MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WEST BENGAL

Paper Code : HU-501

ECONOMICS FOR ENGINEERS

Time Allotted : 3 Hours   *Full Marks* : 70

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

GROUP – A
(Multiple Choice Type Questions)

1. Choose the correct alternatives for any *ten* of the following :   10 × 1 = 10

   i)   Cost reflected in accounting system only is called

        a) Cash cost   b) Overhead cost

        c) Book cost   d) Direct cost.

   ii) The opportunity cost of a good is

        a) the time lost in finding it

        b) the quantity of other goods sacrificed to the another unit of that good

        c) the expenditure on the good

        d) the loss of interest in using saving.

iii) Which one is the right Accounting Equation ?

    a)   Assets – Liabilities = Capital

    b)   Assets + Liabilities = Capital

    c)   Assets + Capital = Liabilities

    d)   None of these.

iv) Inflation makes

    a)   future rupees less valuable than present rupees

    b)   future rupees more valuable than present rupees

    c)   future rupees equal to present rupees

    d)   none of these.

v) If A and B are two independent events then $P(A$ and $B)$ is

    a) $P(A) \times P(B)$

    b) $P(A) + P(B)$

    c) $P(A) / P(B)$

    d) $P(A) - P(B)$.

vi) To compute the construction cost per square foot of a building

    a) per unit model will be used

    b) segmenting model will be used

    c) learning curve estimation process will be used

    d) none of these.

vii) Which one is fixed cost ?

    a) Depreciation of fixed assets

    b) Excise duty

    c) Cost of advertising

    d) Sales tax.

viii) Which one of the following is helpful for measuring inflation ?

    a) Learning curve

    b) Segmentation model

    c) Consumer price index

    d) MARR (Minimum Attractive Rate of Return).

ix) In a decision tree arrows coming out of which node have probabilities ?

a) Decision node

b) Random node

c) Both (a) and (b)

d) None of these.

x) The present worth of an alternative is 0. What do we know about the value of the future worth ?

a) $FW < 0$

b) $FW = 0$

c) $FW > 0$

d) Cannot be determined without cash flows.

xi) If the inflation rate is 6% per year and the market interest rate is known to be 15% per year, what is the implied real interest rate in this inflationary economy ?

a) 11·45%   b) 9·00%

c) 8·49%   d) 8%.

xii) A machine worth Rs. 1,00,000 is purchased by paying Rs. 20,000 down payment and 12 monthly instalments of Rs. 8,000 each. The book cost at the time of purchase is

a) Rs. 1,00,000

b) Rs. 8,000

c) Rs. 80,000

d) Rs. 12,000.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following. 3 x 5 = 15

2. What are the different methods of calculating depreciation ?

3. If Rs. 100 is invested at a compound interest @ 10% p.a. for 3 years, what will be the respective future value for consecutive 3 years ?

4. What is 'Simulation Model' ? How is the same practically applicable in decision making process ?

5. Define Learning Curve. What are the limitations of Learning Curve ?

6. State the concept of Sensitivity Analysis.

GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following. 3 × 15 = 45

7. The income statement of Vignesh Ltd. is as follows :

	Rs.		Rs.
To Opening Stock	2,00,000	By Sales	13,00,000
To Purchases	8,00,000		
To Direct expenses	1,00,000		
Gross Profit	2,00,000		
	13,00,000		**13,00,000**
To Admin. expenses	1,00,000	By Gross profit	2,00,000
To selling expenses	80,000	Profit on sale of investment	60,000
To non-operating expenses	40,000	Dividend received	40,000
Net profit	80,000		
	3,00,000		**3,00,000**

Calculate the Gross Profit Ratio, Net Profit Ratio, Operating Ratio, Operating Profit Ratio and Expense Ratio.

8. a) Differentiate elaborately between Absorption Costing and Marginal costing.

   b) Variable cost per unit is Rs. 12. Selling price per unit is Rs. 20. Fixed expenses are Rs. 60,000. Find BEP. What will be the selling price per unit if the BEP is brought down to 6000 units ? 7 + 8

9. Explain the importance of Ratio Analysis and Capital budgeting methods in an organization ? 7 + 8

10. The following details are on the cash flows of two projects A and B :

Year	Project A cash flows (Rs.)	Project B cash flows (Rs.)
0	4,00,000	5,00,000
1	2,00,000	1,00,000
2	1,75,000	2,00,000
3	3,25,000	3,00,000
4	2,00,000	4,00,000
5	1,50,000	2,00,000

Compute *PBP*, *NPV* and *PI* for A and B and suggest which project should be accepted and why ? 5 + 5 + 5

11. Write short notes on any *three* of the following : 3 × 5

   a) Balance Sheet

   b) Average Rate of Return (ARR)

   c) Life cycle costing

   d) Power sizing model of cost estimation

   e) Debt repayment.