MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WEST BENGAL

Paper Code : HM-HU701 Economics for Engineers

Time Allotted : 3 Hours *Full Marks :70*

The Figures in the margin indicate full marks.
Candidate are required to give their answers in their own words as far as practicable

Group-A (Very Short Answer Type Question)

1. Answer any ten of the following : [1 x 10 = 10]
   - (i) The shape of total fixed cost curve is
   - (ii) Which of the following concepts is the opposite of inflation?
   - (iii) A person deposits a sum of Rs. 20,000 at the interest rate of 18% compounded annually for 10 years. Find the maturity value after 10 years.
   - (iv) Depreciation charged under diminishing method-------------------------
   - (v) What do mean by demand pull inflation?
   - (vi) Current assets include only those assets which are expected to be realized within-------------
   - (vii) Present Worth analysis involves--------
   - (viii) Working capital is the
   - (ix) Which theory describes money received in the current time it has more worth than money received in future?
   - (x) When the price of Raw materials increases , the Supply curve shifts--------
   - (xi) None of these Cash flows are assumed to arise at
   - (xii) The Purchasing Power of money varies

Group-B (Short Answer Type Question)

Answer any three of the following [5 x 3 = 15]

2. What do you mean by improvement and learning curve? State its benefits. [5]
3. The following data are obtained from the records of factory: [5]

sales	Rs.2,00,000
Raw material consumed	Rs.60,000
Labour charges	Rs.40,000
Variable overhead	Rs.20,000
Fixed overhead	Rs.25,000

Calculate Break-even point sales in items of Rupees value.

4. What is price Elasticity of demand? [5]
   Consider the demand for a good. At price Rs 4, the demand for the good is 25 units. Suppose price of the good increases to Rs 5, and as a result, the demand for the good falls to 20 units. Calculate the price elasticity.
5. If C(x)= X^(3)+6X^2+ 2X+200 find the value of fixed cost (FC), variable cost (VC), average cost(AC), Marginal cost (MC) and Average variable cost.(AVC). [5]

6. Establish the income statement out of the following data for ABC Ltd. For the year ended on 31st March, 2022:

Sales: Rs. 2,00,000
Cost of goods sold: Rs. 56,000
Operating expenses: Rs. 12,000
Non-operating expenses: Rs. 4,500
Interest: Rs. 1,000
Tax rate: 40%
Ans: Income statement of ABC Ltd. For the year ended on 31.12.2022

Group-C (Long Answer Type Question)
Answer any three of the following [15 x 3 = 45]

7. (a) What is index number? [3]
   (b) What are the advantages of index numbers? [6]
   (c) Labour cost index value was at Rs.124 ten years ago and it is Rs.188 today. Annual labour costs for similar capacity were Rs. 675500 the years ago. Estimate the present annual labour cost [6]
8. (a) What is IRR? [3]
   (b) What is MIRR? [2]
   (c) What are the limitation of IRR method? [5]
   (d) What are the difference between IRR and NPV? [5]
9. (a) What is the relationship between Bond, YTM and Coupon yield [2]
   (b) Consider a bond with a coupon rate of 10% charged annually. The par value is Rs.2,000 and the bond has 5 years to maturity. The yield to maturity is 11 %. What is the value of the bond Rs. [5]
   (c) [8]

Particulars	Rs.	Particulars	Rs.
Equity share capital	20,00,000	Fixed Assets	55,00,000
10% Preference share capital	20,00,000	Stock	1,75,000
Reserves	11,00,000	Debtors	3,50,000
10% Debentures	10,00,000	Bills receivable	50,000
Creditors	1,00,000	Cash	2,25,000
Bank-overdraft	1,50,000	Fictitious Assets	1,00,000
Bills payable	45,000		
Outstanding expenses	5,000		
	64,00,000		64,00,000

Beside the details mentioned above, the opening stock was of Rs. 3,25,000. Taking 360 days of the year, calculate the following ratios; also discuss the position of the company: Gross profit ratio. Stock turnover ratio. Operating ratio. Current ratio.

10. On 1st April, 2015, furniture costing ₹ 55,000 was purchased. It is estimated that its life is 10 years at the end of which it will be sold for ₹ 5,000. Additions are made on 1st April 2016 and 1st October, 2018 to the value of ₹ 9,500 and ₹ 8,400 (Residual values ₹ 500 and ₹ 400 respectively). Show the Furniture Account for the first four years, if Depreciation is written off according to the Straight-Line Method. [15]

11. (a) There are three alternatives available to meet the demand of a particular product. They are as follows: [8]

Manufacturing the product by using process A

Manufacturing the product by using process B

Buying the Product

The details are as given in the following table:

Cost elements	Manufacturing the product by using process A	Manufacturing the product by using process B	Buy
Fixed cost/year (Rs.)	5,00,000	6,00,000	
Variable/unit (Rs.)	175	150	
Purchase price/unit(Rs.)			125

The annual demand of the product is 8,000 units. Should the company make the process the product using process A or process B or buy it?

(b) The expected cash flows of a project are as follows [7]

Year (at the end)	A
0	-1,00,000
1	20,000
2	30,000
3	40,000
4	50,000
5	30,000

The cost of capital is 12%. Calculate the following:

Net present value

Benefit-cost ratio

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