B.E. (Fire Engineering) Seventh Semester (C.B.S.)

Engineering Economics

P. Pages : 2 **NRT/KS/19/3969**

Time : Three Hours * 0 3 1 5 * Max. Marks : 80

Notes :
1. All questions carry marks as indicated.
2. Solve Question 1 OR Questions No. 2.
3. Solve Question 3 OR Questions No. 4.
4. Solve Question 5 OR Questions No. 6.
5. Solve Question 7 OR Questions No. 8.
6. Solve Question 9 OR Questions No. 10.
7. Solve Question 11 OR Questions No. 12.
8. Due credit will be given to neatness and adequate dimensions.
9. Assume suitable data whenever necessary.
10. Illustrate your answers whenever necessary with the help of neat sketches.
11. Use of non programmable calculator is permitted.
12. Use of interest table is permitted.

1. a) Distinguish between 'extension & increase in demand', 'contraction and decrease in demand'. **7**

b) Microeconomics is a microscopic study of the economy. Explain. **7**

OR

2. a) Define demand for a commodity explain various factors which determine demand for a commodity. **7**

b) Why is there a need for a separate study of macroeconomics? Explain giving some examples of macroeconomics paradoxes. **7**

3. a) Explain in details what do you understand by Time value of money with appropriate examples. **7**

b) A person wishes to have a future sum of ₹1,00,000 for his son's education after ten years from now. What is the single payment that he should deposit now so that he gets the desired amount after 10 years? The bank gives 15% interest rate compounded annually. **6**

OR

4. a) Explain a cash flow diagram. Illustrate your answer with the appropriate diagram. **7**

b) A company wants to set up a reserve which will help the company to have a annual equivalent amount of ₹10,00,000 for the next 20 years towards its employees measures. The reserve is assumed to grow at the rate of 15% annually find the single payment that must be made now as the reserve amount. **6**

5. a) A finance company advertises two investment plans. In plan 1, the company pays ₹12,000 after 15 years for every ₹1,000 invested now. In Plan 2, for every ₹1,000 invested, the company pays, ₹4,000 at the end of the 10^{th} year and ₹4,000 at the end of the 15^{th} year. select the best investment plan from the investors point of view at i = 12% compounded annually. **7**

b) Explain the present worth factor. **6**

OR

6. a) Novel Investment Ltd. Accepts ₹10,000 at the end of every year for 20 years and pays the investor ₹8,00,000 at the end of every year for 20 years and pays the investor ₹15,00,000 at the end of 25th year. Which is the best investment alternative? Use present worth base with i = 12% compounded annually. **7**

b) Explain series compound amount factor. **6**

7. a) Explain the concept of Nominal interest and effective interest. **7**

b) A granite company is planning to buy a fully automated granite cutting machine. If it is purchased under down payment, the cost of machine is ₹16,00,000. If it is purchased under installment basis, the company has to pay 25% of the cost at the time of purchase and the remaining amount in 10 annual equal installments of ₹2,00,000 each. Suggest the best alternative for the company using the present worth basis at i = 18% compounded annually. **6**

OR

8. a) Explain the meaning of "Sinking fund factor". **7**

b) Explain the meaning of Gradients and capitalized costs. **6**

9. a) A firm has identified three mutually exclusive investment proposals whose details are given below. The life of all three alternatives is estimated to be five years with negligible salvage value. The minimum attractive rate of return is 12% **7**

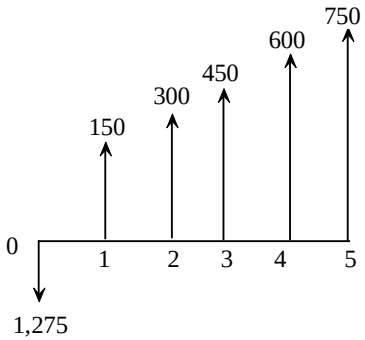
	Alternative		
	A_1	A_2	A_3
Investment	₹1,50,000	₹2,10,000	₹2,55,000
Annual net Income	₹45,000	₹58,260	₹69,000

Find the best alternative based on the rate of return method of comparison.

b) Explain the relationship between inflation and discount rate. **7**

OR

10. a) For the cash flow diagram shown below, compute the rate of return. The amounts are in rupees. **7**



Cash flow diagram.

b) Explain the selection of discount rate for the project. **7**

11. a) Explain the Break Even point and Margin of safety. **7**

b) Write a note on cost volume profit analysis. **6**

OR

12. a) Give a classification of costs based on activity or volume. **7**

b) What is linear programming? What are the chief characteristics of linear programming problem. **6**

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