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

Engineering Economics

P. Pages : 2 **NIR/KW/18/3969**

Time : Three Hours * 1 8 5 7 * 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 tables is permitted.

1. a) Distinguish between microeconomics and macroeconomics. **7**

b) State and explain law of demand. Discuss in details the determinants of demand. **7**

OR

2. a) Scarcity is the mother of all economic problems. Do you agree ? If so how ? **7**

b) Macroeconomics is a study of aggregates. Discuss. **7**

3. a) Explain time value of money. **7**

b) What do you understand by project cash flow ? Explain in details. **6**

OR

4. a) Explain in details the applications of interest formulas. **7**

b) A bank gives a loan to a company to purchase an equipment worth ₹ 10,00,000 at an interest rate of 12% compounded annually, this amount should be repaid in 15 yearly equal installment. Find the installment amount that the company has to pay to the bank. **6**

5. a) Explain series compound amount factor and sinking fund factor. **7**

b) What is effective interest rate ? Give examples. **6**

OR

6. a) Explain the present worth factor, and series payment worth factor. **7**

b) Credit cards usually charge interest at a rate of 1.5% per month. This is a nominal rate of 18%. What is the effective rate ? **6**

7. a) Explain the concept of continuous cash flow and capitalized costs. **7**

b) Explain other interest calculation concepts such as "beginning of period payments" and "gradients". **6**

OR

8. a) A small business with an initial outlay of ₹ 12,000 yields ₹ 10,000 during the first year of its operations and the yield increases by ₹ 1,000 from its second year of operation upto its 10^{th} year of operation. At the end of life of business, the salvage value is zero. Find the present worth of the business by assuming an interest rate of 18% compounded annually. **7**

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

9. a) A person is planning a new business. The initial outlay and cash flow patterns for the new business are as listed below. The expected life of the business is five years. Find the rate of return for the new business. **7**

Period	1	2	3	4	5
Cash flow (₹)	1,00,000	30,000	30,000	30,000	30,000

b) What is discount rate ? Explain the selection of discount rate. **7**

OR

10. a) A company is trying to diversify its business in a new product line. The life of the project is 10 years with no salvage value at the end of its life. The initial outlay of the project is ₹ 20,00,000. The annual net profit is ₹ 3,50,000. Find the rate of return for the new business. **7**

b) Explain the concepts of income expansion, cost reduction and discount rate. **7**

11. a) Explain the concept of Benefit cost analysis. How is measurement of benefits and costs undertaken ? **7**

b) A manufacturing company incurs a fixed cost of ₹ 18,000. The variable costs accounts ₹ 8 = 00 per unit and selling price is ₹ 13 = 00. Find the number of pieces to be produced to break even. **6**

OR

12. a) Explain Graphical method of linear programming. **7**

b) Explain the concept of treatment of uncertainty in benefit cost analysis. **6**

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