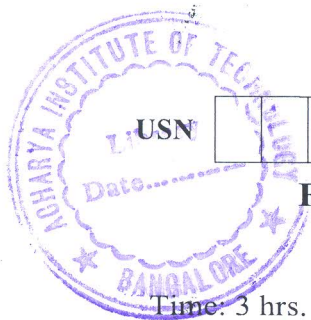


# CBCS SCHEME

15ME51



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## Fifth Semester B.E. Degree Examination, Jan./Feb. 2021 Management and Engineering Economics

Time: 3 hrs.

Max. Marks: 80

**Note:** Answer any FIVE full questions, choosing ONE full question from each module.

### Module-1

- 1 a. Define Management. Differentiate between Administration and Management. (08 Marks)  
b. Explain briefly the purpose and planning. (08 Marks)

OR

- 2 a. Briefly explain, whether management is a Science (or) Art. (08 Marks)  
b. Explain briefly the main steps involved in planning. (08 Marks)

### Module-2

- 3 a. Explain with a neat diagram, line and staff organization. (08 Marks)  
b. Briefly explain the techniques of selection. (08 Marks)

OR

- 4 a. Describe briefly the essentials of a Sound Control System. (08 Marks)  
b. Briefly explain the Maslow's Hierarchy of needs. (08 Marks)

### Module-3

- 5 a. Explain how Cash Flow Diagrams (CFD) are helpful to the decision maker to understand and solve Engineering Economics problems and give borrower's and lender's perspectives for cash flow diagram. (08 Marks)  
b. A person is planning for his retired life. He has 10 more years of service. He would like to deposit 20% of his salary which is Rs 10,000/- at the end of the First year and there after he wishes to deposit the same amount (Rs 10,000) with an Annual increase of Rs 2000/- for the next 9 years with an interest rate of 20%. Find the total amount at the end of the 10<sup>th</sup> year of the above series. (08 Marks)

OR

- 6 a. State and explain Law of Returns. (08 Marks)  
b. Determine the effective interest rate in the following cases :  
i) Nominal rate of 12% compounded monthly with time interval of one year.  
ii) Nominal rate of 18% compounded weekly with a time interval of one year.  
iii) Nominal rate of 13% compounded monthly with a time interval of two years.  
iv) Nominal rate of 9% compounded semi annually with a time interval of two years. (08 Marks)

### Module-4

- 7 a. Two motorcycles of brand "A" and "B" are available on the following terms :  
i) Motor cycle "A" – make a down payment of Rs 5,000/- and then Rs 6,000/- at the end of each year for 7 years.  
ii) Motor cycle "B" – make a down payment of Rs 15,000/- and no payment for the next 3 years. From end of the 4<sup>th</sup> year annual payments of Rs 12,000/- for the next 3 years. Find the future worth of Motor cycle A & B. (08 Marks)

1 of 2

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and/or equations written eg. 42+8 = 50, will be treated as malpractice.

- b. A stand by lighting generator is required for a shop. Two types are available. If both generators have a life of 4 years and the interest rate is 15% per year, which offers the lowest equivalent annual cost.

	Type - 1	Type - 2
First - Cost	Rs 5,000/-	Rs 3,200/-
Salvage value	Rs 1,000/-	- Nil -
Annual operating costs	Rs 780/-	Rs 950/-

(08 Marks)

OR

- 8 a. Compare the two investment proposals given below, if the firms MARR is 15%. Life of all the two proposals is 10 years. Compare using IRR.

Investment proposal	Initial Cost	Annual Return
Proposal 1	5,50,000/-	1,40,000/-
Proposal 2	6,25,000/-	1,60,000/-

(08 Marks)

- b. A crane can be taken on lease for a project for 3 years for Rs 1,80,000/- payable now, maintenance included. It can also be purchased for Rs 2,40,000/- and be sold at the end of 3 years for Rs 1,00,000/-. Maintenance costs are expected to be Rs 5,000/- per year for the first two years and Rs 10,000/- for the third year payable at the end of each year. At what interest rates would the two alternatives be equivalent? (08 Marks)

**Module-5**

- 9 a. Briefly explain the functions of Estimating department. (08 Marks)
- b. A CNC machine costs Rs 30,00,000/- is estimated to serve for 8 years after which its salvage value is estimated to be Rs 2,50,000/- Find
- Depreciation fund at the end of the 5<sup>th</sup> year by Fixed percentage method and Declining Balance method.
  - Book value of the machine after 4<sup>th</sup> year and 6<sup>th</sup> year by Declining Balance method.

(08 Marks)

OR

- 10 a. Explain with a block diagram the elements of cost and components of cost. (08 Marks)
- b. 'Pizza corner' employed 75 workers in a particular month to work in the outlets as well as for home delivery. The following are the details of expenditure :
- Cost of material = Rs 80,000/-
  - Rate of wages for each workers = Rs 20 per hour of normal duty, Rs 40 per hour of overtime duty.
  - Man hours per day of normal duty = 8 hours.
  - Number of holidays per month (without wages) = 5 days.
  - Total overhead expenses = Rs 20,000/-.
  - Total overtime availed by workers = 200 hours.
  - Profit = 20% of total cost.
- Determine
- Total cost for the month.
  - Profit for the month.
  - Man hour rate of overheads.

(08 Marks)

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