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18ME51

Fifth Semester B.E. Degree Examination, June/July 2025
Management and Economics

Time: 3 hrs.

Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. Use of discrete compound interest factors handbook is permitted.

Module-1

1 a. Explain the roles of management. (06 Marks)
   b. Explain the contributions of F.W. Taylor on scientific management. (08 Marks)
   c. With examples explain different types of plans. (06 Marks)

OR

2 a. Differentiate between management and administration. (06 Marks)
   b. Explain the characteristics of good objectives. (08 Marks)
   c. Explain hierarchy of plans. (06 Marks)

Module-2

3 a. Explain the principles of organization. (08 Marks)
   b. Explain the different leadership styles. (12 Marks)

OR

4 a. Explain Maslow's hierarchy of need theory. (08 Marks)
   b. Explain the essentials of good control system. (06 Marks)
   c. What is span of control? Explain the factors governing it. (06 Marks)

Module-3

5 a. Differentiate between the micro and macro economics. (06 Marks)
   b. Explain the law of returns. (06 Marks)
   c. A person estimates an expenditure of Rs.10 lakh after 10 years from now. He plans to deposit an equal amount at the end of every year for next 10 years at a rate of interest 8% compounded annually. Find the equivalent amount that must be deposited at the end of every year for next 10 years. Draw the cash flow diagram also. (08 Marks)

OR

6 a. With a neat sketch, explain problem solving and decision making process. (06 Marks)
   b. An individual plans to deposit Rs.13,000 at the end of first year and thereafter an annual increase of Rs.1500 for next 9 years. If he can expect a return of 13% interest rate, find the maturity value at the end of 10th year. (06 Marks)
   c. A person wishes to have a future sum of Rs.12 lakh in 13 years from now. What is the single payment that he should deposit now so that he gets the desired amount after 13 years? The person has two choices:
   i) Deposit in a nationalized bank, with 10% rate of interest compounded annually.
   ii) Deposit in a private bank, at 9% rate of interest compounded quarterly. (08 Marks)

Module-4

7 a. Compare the present worth of the following alternatives using interest rate of 8% and suggest the best alternative:

	P	Q
Initial investment (Rs.)	3,000	8,000
Life cycle of the alternative	3 years	9 years
Annual cost (Rs.)	2,100	1,200

(10 Marks)

   b. 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 Rs.20,00,000 and the annual net profit is Rs.3,50,000. Find the rate of return for the new business. **(10 Marks)**

OR

8 a. Cost of Maruti Suzuki Swift LXi (Petrol vehicle) is Rs.6,25,000, annual maintenance cost is Rs.25,000, it will give average millage of 20 km/litre of petrol and the resale value after 7 years is Rs.2,75,000.
      Cost of Maruti Suzuki Swift LDi (Diesel vehicle) is Rs.7,15,000, annual maintenance cost is Rs.40,000, it will give average mileage of 25 km/litre of diesel, resale value after 7 years is Rs.3,25,000. Petrol price is Rs.84 per liter and the diesel price is Rs.72 per liter in the first year and the price of both petrol and diesel increases Rs.4 per liter every year.
      Both the vehicles run for 10,000 km in a year. Find the NPW of LXi and LDi for 10% interest rate and suggest which vehicle is preferred. **(14 Marks)**

   b. An industry desires an economic analysis to determine which of the two machines is attractive in a given interval of time. The MARR is 15%. Following data are to be used for the analysis.

	Machine X	Machine Y
First cost (Rs.)	1,50,000	2,40,000
Estimated life (years)	12	12
Salvage value (Rs.)	0	6,000
Annual maintenance cost (Rs.)	0	4,500

   Which machine would you choose? Base your answer on annual equivalent cost.

(06 Marks)

Module-5

9 a. With a block diagram explain various elements and components of cost. **(08 Marks)**

   b. A company produces automobile components. The selling expenses are $1/3^{rd}$ of the factory cost. If the material cost, labor cost and factory overheads in the ratio of 1:3:2 and if the material cost is Rs.3000, what profit is made if the management wants to make a profit of 10% on total cost? Also determine, prime cost, factory cost, total cost and selling price of component. **(12 Marks)**

OR

10 a. With examples explain the causes of depreciation. **(06 Marks)**

    b. The initial cost of a machine is Rs.12,000 and it will have a salvage value of Rs.2,000 after a useful period of 5 years. Using reducing balance method, calculate the depreciation fund and book value at the end of each year, also plot a graph of depreciation fund against number of years.
       Find the depreciation fund accumulated at the end of 3rd year. **(14 Marks)**

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