CBCS SCHEME

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18ME51

# Fifth Semester B.E. Degree Examination, June/July 2023
## Management and Economics

Time: 3 hrs. Max. Marks: 100

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

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.

### Module-1

1 a. Define Management. Explain the nature and characteristics of management. **(10 Marks)**

b. Write about roles of management and what are different level of management. **(10 Marks)**

**OR**

2 a. Explain the modern management approaches. **(10 Marks)**

b. State and explain importance and purpose of planning process. **(10 Marks)**

### Module-2

3 a. State and explain the principle of organization. **(10 Marks)**

b. Explain with sketch line and staff organization. **(10 Marks)**

**OR**

4 a. Explain the techniques of selection of staffing. **(10 Marks)**

b. Define controlling? Explain the methods of establishing sound controlling. **(10 Marks)**

### Module-3

5 a. Explain how the problem solving process leading ultimately to a decision is carried out. **(06 Marks)**

b. Define elasticity and explain the factors that influence elasticity of demand. **(06 Marks)**

c. A person takes a loan of Rs.10,000/- from a Bank at Interest of 10% PA. Find the amount if,
(i) Interest is compounded annually. (ii) Interest is compounded half yearly.
(iii) Interest is compounded quarterly. (iv) Interest is compounded monthly. **(08 Marks)**

**OR**

6 a. Draw the cash flow diagram for Lender and Borrowers. **(04 Marks)**

b. An amount of Rs.1200 per year is to be paid into an account each for the next five years. Using Nominal Interest of 12% determine the total amount. The account will have at the end of $5^{th}$ year under the following condition :
(i) Deposit made at the end of each year with interest compounded monthly.
(ii) Deposit made at the end of each year with interest compounded continuously. **(08 Marks)**

c. The rights to a patent have been sold under an agreement in which annual year end payment of Rs.100,000 are to be made for the next 10 years what is the future sum of this annuity? What is the present worth of the annuity at an Interest rate 7 percent? **(08 Marks)**

### Module-4

7 a. Briefly explain the condition for present worth comparision. **(05 Marks)**

b. Explain IRR (Interest Rate of Return) and MARR (Minimum Acceptable rate of Return). **(05 Marks)**

c. Two holiday cottage are under consideration compare the present worth of the cost of 24 years service at an Interest rate of 5 percent, when neither cottage has a realizable salvage value.

| Particular | Cottage-1 | Cottage-2 |
|---|---|---|
| First cost | Rs.4500 | Rs.10,000 |
| Estimated life | 12 year | 24 year |
| Annual maintenance cost | Rs.1000 | Rs.720 |

**(10 Marks)**

**OR**

8 a. Stand by lighting generator is require for a shop. Two types are available.

| Particular | Type-1 | Type-2 |
|---|---|---|
| First cost | Rs.5000 | Rs.3200 |
| Salvage value | Rs.1000 | Nil |
| Annual operating cost | Rs.780 | Rs.950 |

If both generator have a life of 4 years and the interest rate is 15 percent per year which offers the lowest equivalent annual cost? **(10 Marks)**

b. Farm house can be purchased for Rs.90,000 and the expected resale value after 20 years is Rs.60,000. If the annual rental income is Rs.11,800 and expenses Rs.4700. What will be the rate of return earned on this farm house? **(10 Marks)**

## Module-5

9 a. Briefly explain the contents of element of cost. **(05 Marks)**

b. A firm is producing 100 units per day. The direct material cost is fund to be Rs.160. The direct labour cost is Rs.200 and Factory over heads chargeable to it is Rs.250. If the selling expenses are 40% of the factory cost. What must be selling price of each unit to realize a profit of 15% of the selling price? **(07 Marks)**

c. A mild steel component as shown in a Fig. Q9 (c) below is to be manufactured. Find the Total cost of material the density of material is 7.81 gm/cm$^3$. The cost of material is Rs.60/kg. All dimensions are in cm.

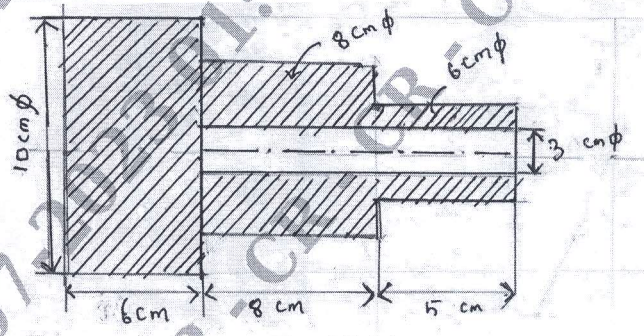


Fig. Q9 (c) **(08 Marks)**

**OR**

10 a. Briefly explain the following methods of depreciation:
(i) Diminishing balance method
(ii) Sinking fund method. **(10 Marks)**



b. A CNC machine costs Rs.30,00,000 is estimated to serve 8 years after which its salvage value is estimated to be Rs.2,50,000. Find
(i) Depriciation fund at the end of the 5$^{th}$ year by fixed percentage method and declining balance method.
(ii) Book value of the machine after 4$^{th}$ year and 6$^{th}$ year by declining balance method. **(10 Marks)**

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