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Question Paper Code : 20859

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2018.

Eighth Semester

Mechanical Engineering

MG 6863 — ENGINEERING ECONOMICS

(Regulations 2013)

(Also common to PTMG 6863 – Engineering Economics for B.E. (Part-Time)
Seventh Semester – Mechanical Engineering – Regulations 2014)

Time : Three hours

Maximum : 100 marks

(Use of present value tables permitted)

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is law of supply?
2. What is a break even chart?
3. What do you mean by Value Analysis?
4. What is effective interest rate?
5. What do you mean by present worth method?
6. What is Cost dominated cash flow?
7. List any two disadvantages of breakdown maintenance.
8. What is called availability in maintenance engineering?
9. What is depreciation?
10. What is inflation?

PART B — (5 × 16 = 80 marks)

11. (a) Bring out the significance of choosing the material for product design selection.

Or

- (b) With examples explain the various elements of the cost.

12. (a) A company has extra capacity that can be used to produce a sophisticated fixture which it has been buying for Rs. 900 each. If the company makes the fixtures, it will incur materials cost of Rs. 300 per unit, labour costs of Rs. 250 per unit, and variable overhead costs of Rs. 100 per unit. The annual fixed cost associated with the unused capacity is Rs. 10,00,000. Demand over the next year is estimated at 5,000 units. Would it be profitable for the company to make the fixtures?

Or

- (b) Explain the concept of time value of money. Also give examples for application of time value of money principle.
13. (a) Beta Industry is planning to expand its production operation. It has identified three different technologies for meeting the goal. The initial outlay and annual revenues with respect to each of the technologies are summarized below. Suggest the best technology which is to be implemented based on the present worth method of comparison assuming 20% interest rate, compounded annually.

Technology	Initial outlay in Rs.	Annual revenue in Rs.	Life (years)
1	12,00,000	4,00,000	10
2	20,00,000	6,00,000	10
3	18,00,000	5,00,000	10

Or

- (b) With illustration explain the concept of future worth method using revenue dominated cash flow diagram.
14. (a) The data on the running cost per year and resale price of equipment 'A', whose purchase price is Rs. 2,00,000, are as follows:
- | | | | | | | | |
|--------------------|----------|--------|--------|--------|--------|--------|----------|
| Year | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Running Cost (Rs.) | 30,000 | 38,000 | 46,000 | 58,000 | 72,000 | 90,000 | 1,10,000 |
| Resale Value (Rs.) | 1,00,000 | 50,000 | 25,000 | 12,000 | 8,000 | 8,000 | 8,000 |
- What is the optimum period of replacement?

Or

- (b) With an illustration explain the need and the use of simple probabilistic model for items which fail completely.

15. (a) Explain the procedure to adjust inflation in calculation depreciation.

Or

(b) With an example explain the straight line method of depreciation. Also list the advantages of using straight line method of depreciation.