Question Paper Code : X 60919

B.E./B.Tech. DEGREE EXAMINATIONS, NOV./DEC. 2020

Sixth/Eighth Semester

Mechanical Engineering

MG 2451/10177 GE 009/GE 1451/080120038/MG 81 – ENGINEERING ECONOMICS AND COST ANALYSIS

[Common to Civil Engineering, Automobile Engineering, Material Science and Engineering and Production Engineering)

(Regulations 2008/2010)

(Also Common to 10177GE009 – Engineering Economics and Cost Analysis for B.E. (Part-Time) Seventh Semester – Mechanical Engineering – Regulations 2010)

Time : Three Hours   Maximum : 100 Marks

Use of statistical tables are permitted.

Answer ALL questions.

PART – A   (10×2=20 Marks)

1. Define economics.

2. Define process planning.

3. Mention any two criteria for buy decision.

4. Define effective interest rate.

5. What are the methods of cash flow ?

6. What is annual equivalent method of comparing alternatives ?

7. List the reasons for replacements.

8. What is defender ?

9. What is depreciation ?

10. Explain in few words the various types of Depreciation.

11. a) Analyze the various types of elasticity of demand and their usefulness.

(OR)

b) What is a Material ? What factors would you consider while selecting a Material ?

12. a) i) Mention the basic principles of brain storming.   **(8)**

   ii) A person wishes to have a future sum of Rs. 1,00,000 for his son's education after 10 years from now. What is the single payment that he should deposit now so that he gets the desired amount after 10years ? The bank gives 15% interest rate compounded annually.   **(8)**

(OR)

b) i) Write briefly about the time value of money.   **(8)**

   ii) A person is planning for his retired life. He has 10 more years of service. He would like to deposit Rs. 8,500 at the end of the first year and thereafter he wishes to deposit the amount with an annual decrease of Rs. 500 for the next 9 years with an interest rate of 15%. Find the total amount at the end of the 10th year of the above series.   **(8)**

13. a) Discuss the Present worth method (Revenue Dominated Cash flow Diagram).

(OR)

b) Discuss the Annual Equivalent Method (Revenue Dominated Cash flow Diagram).

14. a) Discuss the types of Maintenance.

(OR)

b) There are 10,000 bulbs in a decorative set. When any bulb fails to be replaced, the cost of replacing a bulb individually is Rs. 1 only. If all the bulbs are replaced at the same time, the cost per bulb would be reduced to Rs. 0.35. The Percentage of bulbs surviving at the end of Month (t) i.e S(t) and the probability of failures during the month (t) i.e P(t) are given below.

t	0	1	2	3	4	5	6
S(t)	100	97	90	70	30	15	0
P(t)	–	0.03	0.07	0.20	0.40	0.15	0.15

Determine the optimal replacement Policy.

15. a) Write about the procedure to inflation adjustment decisions.

(OR)

b) Write about the methods of depreciation with examples.

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