

Reg. No. :

--	--	--	--	--	--	--	--	--	--

Question Paper Code : 91700

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2014.

Eighth Semester

Mechanical Engineering

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

(Common to Production Engineering/Automobile Engineering, Material Science
and Engineering)

(Regulation 2008/2010)

(Common to PTMG 2451/10177 GE 009 – Engineering Economics and Cost Analysis
for B.E. (Part-Time) Mechanical Engineering – Regulation – 2009/2010)

Time : Three hours

Maximum : 100 marks

Use of Statistical Tables are permitted.

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. How does Marshall explain the Law of Demand?
2. What is Margin of Safety?
3. What is Time value of Money?
4. What is Value Engineering?
5. List out the quantitative and qualitative factors to be considered in 'Make or Buy Decision'.
6. What is statement of changes in financial position based on net working capital known as?
7. List out the functional elements of Maintenance Programme.
8. List out the preventive Maintenance activities.
9. What is depreciation?
10. Explain in few words the various types of Depreciation.

PART B — (5 × 16 = 80 marks)

11. (a) State and explain the factors influencing Process design.

Or

- (b) Explain why the demand curve slopes downward.

12. (a) Sri Nethra Industries Ltd., Offers 12% interest on Fixed deposits. What is the effective rate of interest if compounding is done.

(i) Half yearly

(6)

(ii) Quarterly

(5)

(iii) Monthly.

(5)

Or

- (b) Mr. Nimish Expects to receive Rs. 10,000 at beginning of each year for 5 years. Calculate the present value of annuity due, assuming an interest rate of 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) A machine is purchased for Rs. 45,000 and has a life of 20 years. Its salvage value is estimated to be Rs. 3,000. Using the sum of years digital method, calculate Annual Depreciation charges for first, sixth, and eleventh, sixteenth and twentieth years.

Or

- (b) Calculate the Depreciation, accumulated Depreciation and book value for the following Data using Declined Balance Method.

Initial Investment	=	Rs 24,000
Salvage value	=	Rs. 3,000
Time	=	5 years.
