

4/6/2012  
ANU

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**Question Paper Code : 20357**

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2012.

Eighth Semester

Mechanical Engineering

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

(Common to Production Engineering)

(Regulation 2008)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define Break Even Point.
2. State the law of demand.
3. Write any four aims of value engineering.
4. Give the expression for single payment present worth factor.
5. What is meant by discounting?
6. Write down the techniques for comparing the worthiness of a project.
7. What is predictive maintenance?
8. Define economic life of an asset.
9. Define inflation.
10. State the objectives behind the provision of depreciation.

PART B — (5 × 16 = 80 marks)

11. (a) Explain in detail about flow in an economy. (16)

Or

- (b) Explain the concept of multi item break even analysis with an example. (16)

12. (a) What are the functions of value engineering? Discuss the value engineering procedure. (16)

Or

- (b) A manufacturing company has extra capacity which can be used to produce gears that the company has been buying for Rs. 300 each. If the company makes the gears, it will incur material cost of Rs. 90 per unit, labour cost of Rs. 120 per unit and variable overhead cost of Rs. 30 per unit. The annual fixed cost associated with the unused capacity is Rs. 2,40,000. Demand over the next year is estimated as 4000 units.

- (i) Should company make the gears or continue to buy?  
(ii) Suppose the capacity could be used by another department for the production of the same pump components that would cover its fixed and variable cost and contribute Rs 90,000 to profit. What would be the more advantageous gear production or pump components production? (16)

13. (a) Explain annual equivalent cost method and Net present worth method with appropriate examples. Justify which method should be used for company assets having un equal lives. (16)

Or

- (b) A person invests a sum of Rs. 2,00,000 in a business and receives equal net revenue of Rs. 50,000 for the next 10 years. At the end of 10<sup>th</sup> year, the salvage value of the business is Rs. 25,000. Find the rate of return of the business. (16)

14. (a) Explain different types of maintenance with their merits and suitable examples. (16)

Or

- (b) (i) What is defender challenger concept in replacement? Illustrate with an example. (8)  
(ii) Explain the causes for replacement of assets, in detail with examples. (8)

15. (a) Original cost of the machine : Rs. 20,000  
Life time : 5 years  
Scrap or residual value : Rs. 2,500

Find out the rate of depreciation for the machine using double declining balance method. (16)

Or

- (b) (i) Explain sinking fund method of calculating depreciation. (8)  
(ii) Write short notes on inflation adjusted decisions. (8)
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