

**UNIVERSITY OF PETROLEUM  
AND ENERGY STUDIES**



**End Semester Examination, April, 2017**

**Program/course:** B. Tech ADE  
**Subject:** Economics and life cycle concepts  
**Code:** PMEO 401  
**No. of page/s:**3

**Semester –** 8<sup>th</sup> Sem  
**Max. Marks** : 100  
**Duration** : 3 Hrs

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**Section-A**

**Answer any five questions**

**Marks: 5×4=20**

1. Define Engineering economics and explain its scope.
2. Discuss the law of Demand.
3. What do you mean by Sinking Fund Depreciation method?
4. Explain Payback period comparison method.
5. What do you mean by Profit Volume Ratio? How does it help in profit planning?
6. Discuss the reason for the decrease in value of assets.

**Section-B**

**Answer following questions**

**Marks: 5×8=40**

7. A factory produces 300 units of a product per month. The selling price is ` 120 per unit and variable cost is ` 80 per unit. The fixed expenses of the factory amount to ` 8,000 per month. Calculate:

- I. The estimated profit in a month wherein 240 units are produced
  - II. The break even sales quantity
  - III. The sales to be made to earn a profit of ` 7,000 per month
8. “Depreciation is a permanent and continuous decline in the quality or value of an asset”. Discuss.
9. Mahesh deposits ` 2,00,000 in a bank account which pays 10% Interest. How much can be withdraw annually for a period of 15 years?
10. Discuss the application of Make or Buy Decision.
11. How the time value of money is important in Investment decision?

**Section-C**

**Answer the following questions****Marks: 2×20=40**

12. A company manufactures dining tables which mainly consist of a wooden frame and a table top. The different materials used to manufacture the tables and their costs are given in Table 2.1.

Table 2.1 Data

Description of item	Quantity	Cost
Wood for frame and legs	0.1 m <sup>3</sup>	Rs. 12,000/m <sup>3</sup>
Table top with sunmica finish	1	Rs. 3,000
Leg bushes	4	Rs. 10/bush
Nails	100 g	Rs. 300/kg
Total labor	15 hr	Rs. 50/hr

In view of the growing awareness towards deforestation and environmental conservation, the company feels that the use of wood should be minimal. The wooden top therefore could be replaced with a granite top. This would require additional wood for the frame and legs to take the extra weight of the granite top. The materials and labour requirements along with cost details to manufacture a table with granite top are given in Table 2.2.

Table 2.2 Data

Description of item	Quantity	Cost
Wood for frame and legs	0.15 m <sup>3</sup>	Rs. 12,000/m <sup>3</sup>
Granite table top	1.62 m <sup>2</sup>	Rs. 800/m <sup>2</sup>
Leg bushes	4	Rs. 25/bush
Nails	50 g	Rs. 300/kg
Total labor	8 hr	Rs. 50/hr

If the cost of the dining table with a granite top works out to be lesser than that of the table with wooden top, the company is willing to manufacture dining tables with granite tops. Compute the cost of manufacture of the table under each of the alternatives described above and suggest the best alternative. Also, find the economic advantage of the best alternative.

13. On 1<sup>st</sup> January, 2012 Krishan Ltd. purchased a machine for ₹ 2,45,000 and spent ₹ 5,000 on its installation. On 1<sup>st</sup> July 2012 an additional machinery costing ₹ 1,00,000 was purchased. On 1<sup>st</sup> July 2014 the machinery purchased on January 1<sup>st</sup>, 2012 was sold for

` 1,40,000 and on the same date a new machine was purchased at a cost of ` 2,00,000. Show statement of machinery for the first three accounting periods after charging depreciation at 5% under the straight line method. Assume that the books are closed on 31<sup>st</sup> December every year.