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P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belgaum)

Sixth Semester, B.E. – Industrial and Production Engineering

Semester End Examination; June/July - 2015

Engineering Economics

Time: 3 hrs *Max. Marks: 100*

***Note**: i) Answer any **FIVE** full questions, selecting at least **TWO** full questions from each part.*
ii) Use of Interest table is permitted

PART - A

1. a. Describe the problem solving process with a diagram. 10

   b. Mention the difference between intnition and analysis. 5

   c. What is tactics and strategy? 5

2 a. Explain the following terms: 10

   i) Simple interest ii) Compound Interest iii) Effective interest rates

   b. Determine the effective interest rate for a nominal annual rate of 6% that is compounded. 10

   i) Semiannually ii) Quarterly iii) Monthly iv) Daily

3 a. Explain the conditions of present worth comparisons. 12

   b. An investor can make 3 end of year payments of ₹ 15000/-. Which are expected to generate of ₹ 10000, at the end of 4 year that will increase annually by ₹ 2500 for the following 4 years? If the investors can earn a rate of returns of 10% on 8 years investment, is this alternative attractive? 8

4 a. Write a note on: 10

   i) Sinking fund method.

   ii) Annuity contract for guaranteed income.

   b. The purchaser of a truck with an operator's platform on a telescoping hydraulic boom will reduce labour cost for sign installation by ₹ 15000/year. The price of the boom truck is ₹ 93000 and its operating cost will exceed those of present equipment by ₹ 250/month. The resale value is expected to be ₹ 18000 in 8 years. Should the boom track be purchased when the current available interest rate is 7% use EAW method? 10

PART - B

5 a. Describe the following : 8

   i) Minimum acceptable rate of return,

   ii) Internal rate of return

   iii) External rate of return

b. A parcel of land adjacent to a proposed freeway exit is deemed likely to increase in value. It can be purchased now for ₹ 80,000 and is expected to be worth of ₹ 1,50,000 within 5 years. During that period it can be rented for pastures at ₹ 1500/year. Assume taxes are presently ₹ 850 and will likely remains constant. What rate of return will be earned on the investment if estimates are accurate? 12

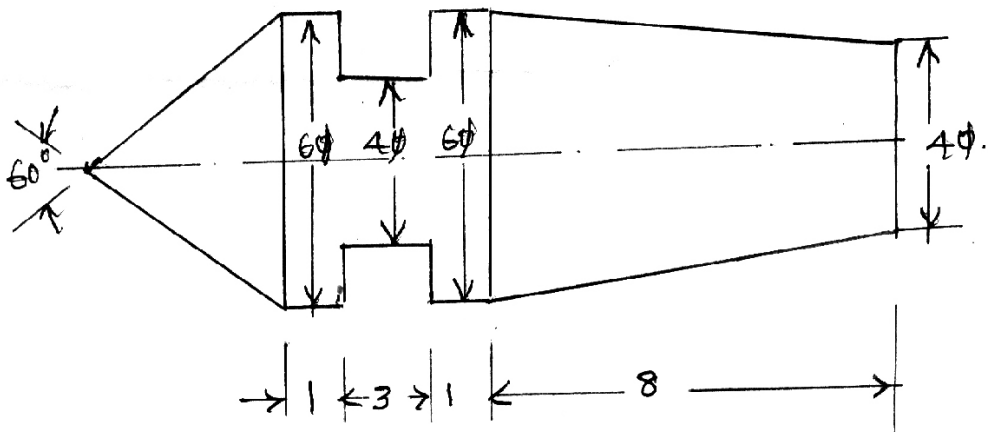
6. a What is depreciation? Explain any two methods of depreciation. 8

b. Explain the various causes of depreciation. 12

7 a. What do you mean by replacement due to deterioration? Explain. 5

b. List and explain the elements of product cost. 5

c. Calculate the weight of a lathe centre shown in figure below, if the material weight is 7.8 gm/cc. Also determine the cost of the material if its rate is ₹ 20/kg. 10



All dimensions are in mm

8 a. What is inflation? Explain the causes of inflation. 5

b. Describe the lease / buy decisions. 5

c. Calculate the BEP in units and Rupees from the following data. 10

Selling price per unit ₹ 12.

Variable cost / unit ₹ 7.

Total fixed cost ₹ 50,000.

i) What sales (units) are required to earn a pretax income of ₹ 60,000/-?

ii) What sales are required to earn a after tax income of ₹ 60,000/- if the tax rate is 40%?

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