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

(An Autonomous Institution affiliated to VTU, Belgaum)

Fifth Semester, B.E. - Mechanical Engineering

Semester End Examination; Dec. - 2014

Engineering Economics

Time: 3 hrs

Max. Marks: 100

Note: Answer any FIVE full questions, selecting at least TWO full questions from each part. .

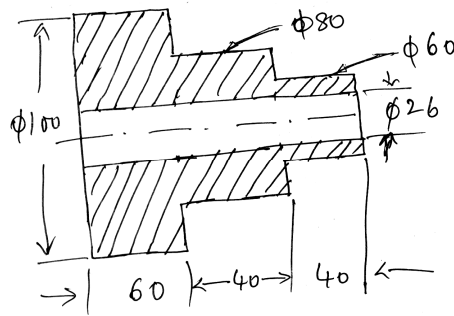
PART - A

1. a. Explain with a neat sketch different laws of returns. 10
- b. Write a note on: (i) wages (ii) Price elasticity of demand. 10
2. a. Explain different types of taxes with advantages. 10
- b. Explain briefly; (i) appreciation and depreciation of money (ii) stock exchange. 10
3. a. Differentiate between simple and compound interest. 5
- b. Find the effective interest rate if the interest is 12%, when compounded (i) half yearly (ii) quarterly. 5
- c. A 45 year old person is planning for his retired life. He plans to divert Rs. 30,000 from his bonus as investment every year for the next 15 years. The bank gives 12% interest rate compounded annually. Find the maturity value of his account when he is 60 years old. Draw CFD. 10
4. a. List and explain the causes for depreciation. 10
- b. The original assets of a company are Rs. 5,80,000. The life of the plant is 9 years. If the scrap value at that time is expected to be Rs. 80,000. Calculate the depreciation at the end of each year by sum of the year's digit method. 10

PART – B

5. a. State the conditions for comparison of alternatives. 6
- b. A company is thinking of purchasing a small truck that has a first cost of Rs. 1,80,000 and is to be kept in service for 6 years, at which time the salvage value is expected to be Rs. 25,000 maintenance and operating costs are estimated at Rs. 25,000 in the first year and will increase at a rate of Rs. 2,000 per year. Determine the present worth of this vehicle, using an interest rate of 12%. 14
6. a. Explain various elements of cost and state their relations. 10
- b. A company produces 500 units of a product per year. Direct materials involved is Rs. 40,000, direct labour Rs. 35,000 and factory overheads Rs. 10,000. If the profit is 15% of selling price and selling overheads are 30% of factory cost, calculate selling price per unit. 10

- 7 a. Briefly explain the basic reasons of replacement. 10
- b. Explain installation and removal cost with an example. 10
- 8 a. Differentiate between costing and estimation. 5
- b. Write a procedure of estimation. 5
- c. Estimate the weight of the cast iron pulley shown in figure by considering density of CI is 7.2 gm/cc.



10

All dimensions are in mm.

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