



10ME71

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Seventh Semester B.E. Degree Examination, June/July 2015
Engineering Economy

Time: 3 hrs.

Max. Marks:100

- Note: 1. Answer any FIVE full questions, selecting atleast TWO questions from each part.
2. Use of discrete interest factors table is permitted.

PART - A

- 1 a. Explain the role of an Engineer and challenges with respect to Economics. (06 Marks)
b. Explain the concept of law of demand and supply. (04 Marks)
c. List the six compound interest factors and their relationship. (06 Marks)
d. A person takes a loan of Rs 12000 from a bank at an interest rate of 18% per annum. Find the amount if the interest is compounded.
i) Annually ii) Half yearly iii) Quarterly iv) Monthly. (04 Marks)
2 a. What is the significance of cash flow diagram? Sketch CFD for i) Borrower's viewpoint ii) Lender's viewpoint. (06 Marks)
b. The following alternatives are available to accomplish an objective of 12 years duration :

Table with 4 columns: Life cycle, First cost, Annual cost, and three plans (Plan A, Plan B, Plan C).

- Compare the present worth of the alternatives using an interest rate of 7%. (08 Marks)
c. Explain two prominent methods used for comparison of assets that have unequal lives. (06 Marks)
3 a. Define the following terms :
i) Service life ii) Accounting life iii) Economic life. (06 Marks)
b. Two models of small machines perform the same function. Type I machine has a low initial cost of Rs 9500, relatively high operating costs of Rs 1900 per year more than those of the type II machine, and a short life of 4 years. The more expensive Type II machine costs Rs 25,100 and can be kept in service economically for 8 years. The scrap value from either machine at the end of its life will barely cover its removal cost. Which is preferred when the minimum attractive rate of return is 8 percent? (06 Marks)
c. A person wants to buy a home theatre system. He estimates that it will last at least for 10 years at the end of which it will not have any salvage value. Show room offers him two alternative ways to pay for the system.
i) Pay Rs 1,00,000 immediately and Rs 50,000 at the end of one year.
ii) Pay nothing until the end of three years and make a single payment of Rs 2,00,000.
If the buyer believes 12% is a suitable rate of interest which alternative is best? (08 Marks)

- 4 a. A company is in the process of selecting the best alternative among the following three mutually exclusive alternatives. Find the best alternative based on rate of return (calculation) comparisons. (08 Marks)

Table with 4 columns: Alternative, Initial Investment, Annual Revenue, Life in years.

- b. A machine is purchased for Rs 8000 and the assumed life is 10 years and scrap value of Rs 2000. If the depreciation is charged by diminishing balance method, calculate the percentage by which value of machine is reducing every year and depreciation fund after 2 years. (06 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.

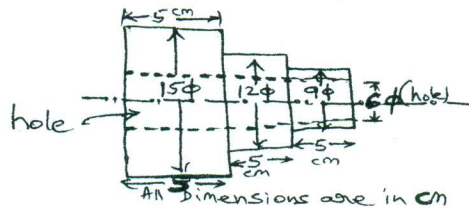
c. Classify the various types of taxes.

(06 Marks)

PART - B

- 5 a. Distinguish between the concept of estimating and costing. (05 Marks)
- b. With the help of examples, explain the various elements of costs. (05 Marks)
- c. A factory produces 6000 spark plugs per day involving a direct material cost of Rs 5,00,000. Direct labour cost of Rs 4,00,000 and factory overheads of Rs 1,50,000. Assume a profit of 20% of selling price and selling overheads are 30% of factory cost. Calculate the selling price of each sparkplug. (05 Marks)
- d. A cast iron cone pulley is shown in fig. Q5(d). Taking density of cast iron as 7.0208gm/cc. Calculate unit weight of component. What is cost of material, if cost per kg is Rs 15. (05 Marks)

Fig.Q5(d)



- 6 a. Explain the significance of finance functions. (06 Marks)
- b. Explain the salient features of : i) Profit and Loss account ii) Balance sheet. (06 Marks)
- c. Prepare a Balance sheet for the given data : (08 Marks)

Dividend payable	Rs 72,000	Debtors	Rs 1,60,000
Bank balance	Rs 10,000	Bills payable	Rs 20,000
Equity shares	Rs 2,00,000	Plant & Equipment	Rs 80,000
Provision for taxes	Rs 40,000	Bills receivable	Rs 20,000
Stock	Rs 77,000	Creditors	Rs 55,000
8% preference shares	Rs 1,35,000	General reserves	Rs 40,000
Land & building	Rs 2,00,000	Cash in hand	Rs 15,000

- 7 a. Explain the significance and limitations of financial ratio analysis (08 Marks)
- b. Write a note on Evaluation of a firm's earning power. (04 Marks)
- c. Classify the various financial ratios and their application. (08 Marks)
- 8 a. List the problems and dangers of budgeting. (06 Marks)
- b. Write a note on Bench Marking of manufacturing. (04 Marks)
- c. Draw a flexible budget for the overhead expenses on the following data : Determine the overhead rate at 70%, 80% and 90% plant capacity. (10 Marks)

Particulars	Plant capacity (80%)
Variable overheads	
Indirect labour	Rs 1,25,000
Spare parts	Rs 45,000
Semi variable overheads	
Power (50% fixed)	Rs 2,25,000
Repairs and maintenance (60% fixed)	Rs 20,000
Fixed overheads	
Depreciation	Rs 1,20,000
Insurance	Rs 35,000
Salaries	Rs 1,25,000
Estimated labour hours	1,60,000 hours
