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10ME71

**Seventh Semester B.E. Degree Examination, Aug./Sept.2020**  
**Engineering Economy**

Time: 3 hrs.

Max. Marks:100

- Note: 1. Answer any FIVE full questions, selecting at least TWO full questions from each part.**  
**2. Use of discrete interest tables is permitted.**

**PART – A**

- 1 a. Briefly explain the problem solving process with a neat diagram. (05 Marks)  
b. Explain the law of demand and law of supply with suitable example. (05 Marks)  
c. Distinguish between strategy and tactics with suitable example. (05 Marks)  
d. Determine the effective interest rate for a nominal rate 6% that is compounded:  
i) Annually ii) Semi-annually iii) Quarterly iv) Monthly v) Daily. (05 Marks)
- 2 a. State and explain the conditions for present worth comparisons. (10 Marks)  
b. An investor can make three end of year payments of Rs.15,000, which are expected to generate receipts of Rs.10,000 at the end of year 4 that will increase annually by Rs.2500 for the following 4 years. If the investor can earn a rate of returns of 10% on other 8 year investments is this alternative attractive. (10 Marks)
- 3 a. Define the following with respect to life of an asset:  
i) Ownership life ii) Accounting life iii) Economic life. (10 Marks)  
b. Two models of small machines perform the same function. Type 1 machine has a low initial cost of Rs.9500, relatively high operating costs of Rs.1900 per year more than those of the type 2 machine, and short life of 4 years. The more expensive type 2 machine costs Rs.25,100 and can be kept in service economically for 8 years. The scrap value from either machine of its life will barely cover its removal cost. Which is preferred when minimum rate of return is 8%? (10 Marks)
- 4 a. Define the following terms: i) MARR ii) IRR iii) ERR. (06 Marks)  
b. Explain the various causes of depreciation. (06 Marks)  
c. A lathe is purchased for Rs.8,000 and assumed life is 10 years and scrap value Rs.2000. If the depreciation is charged by diminishing balance method, calculate the percentage by which value of lathe is reducing every year, and depreciation after 2 years. (08 Marks)

**PART – B**

- 5 a. Differentiate between estimation and costing. (04 Marks)  
b. Explain in brief various components of cost that are to be considered to arrive at the selling price during manufacturing a product. (06 Marks)  
c. The market price of lathe is Rs.50,000 and the discount allowed to the distributor is 20% of the market price. It is found that the selling expense cost is  $1/4^{\text{th}}$  of the factory cost and if the material cost, labour cost and factory over head charges are in the ratio of 1:4:2. What profit is made by the factory on each lathe, if the material cost is Rs.4000. Neglect other overheads. (10 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.

- 6 a. Explain the different method of raising capital. (06 Marks)  
 b. The Shiva Machine Tool Technologies having certain reserves and surplus has the following details as on 31<sup>st</sup> December 2008. Prepare a balance sheet as on December – 2008.

Dividend payable	Rs.72,000
Bank balance	Rs.10,000
Equity shares	Rs.2,00,000
Provision for tax	Rs.40,000
Stock	Rs.77,000
Preference shares	Rs.1,35,000
Land and building	Rs.2,00,000
Debtors	Rs.1,60,000
Bills payable	Rs.20,000
Plant and equipment	Rs.80,000
Bills receivable	Rs.20,000
Creditors	Rs.55,000
General reserve	Rs.40,000
Cash in hand	Rs.15,000

(14 Marks)

- 7 a. List the different types of ratios and explain liquidity ratios and leverage ratios. (10 Marks)  
 b. A company has the following data, net earning after taxes is Rs.6,00,000. Preference dividends Rs.100,000. Dividends to ordinary share holders is Rs.3,00,000, find:  
 i) Dividend payout ratio  
 ii) Retention ratio  
 iii) Earnings per share of dividend per share is Rs.5 (10 Marks)
- 8 a. What are the objectives of budgeting? (05 Marks)  
 b. What are the types of budgets? Explain. (15 Marks)

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