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**Seventh Semester B.E. Degree Examination, June/July 2016**  
**Engineering Economy**

Time: 3 hrs.

Max. Marks: 100

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

**PART – A**

- 1 a. Differentiate between: i) Intuition and analysis, ii) Tactics and strategy. (08 Marks)  
b. Briefly explain the law of demand and supply. (06 Marks)  
c. A loan of ₹10000 borrowed today under an agreement that ₹14000 is to be paid sometime in future. When should the payment be made, if the loan earns interest at a rate of 8% compounded quarterly (interpolate if necessary). (06 Marks)

- 2 a. Explain the future worth method of comparison. (05 Marks)  
b. Two types of trucks are available for transportation use. The details are as follows:

Particulars	Truck A	Truck B
First cost (₹)	10,00,000	15,00,000
Maintenance cost (₹) (Annual)	20,000	15,000
Estimated Salvage value (₹)	2,00,000	5,00,000
Estimated life	5 years	10 years

Both the truck deliver same amount of work. Assume interest rate of 7%. Which truck is to be preferred on PW case. (10 Marks)

- c. A NGO received funds of ₹10,00,000 from the government for the construction and up keep of the administration building for 10 years. Annual maintenance and salary of the staff estimated to be ₹20000 for the first year and likely to increase 10% every year upto 10 years. In addition ₹25000 needed for painting every 5 years. The NGO has to make own arrangement to earn revenue for perpetual maintenance after 10 years. What amount remains with NGO for the construction of building if 10% interest considered? (05 Marks)
- 3 a. Write notes on: i) Ownership life, ii) Accounting life, iii) Economic life. (06 Marks)  
b. The first cost of an asset is ₹5,00,000. The annual maintenance in the first year is ₹2000 and increases by ₹1000 every year upto 10<sup>th</sup> year. The annual income is expected to be ₹50000 in the first year with increase of ₹25000 every year upto 10<sup>th</sup> year. The operating cost is ₹6000 per year. The salvage value is ₹30000 at the end of 10<sup>th</sup> year. Find the equivalent annual cost of the machine at 12% interest rate. (08 Marks)  
c. An asset was purchased five years ago for ₹52000. It was expected to have an economic life of 8 years at which salvage value would be ₹4000. If the function of the asset would no longer needed for what price must it be sold now to recover the invested capital when  $i = 12\%$ . (06 Marks)

- 4 a. Explain: (i) MARR, (ii) IRR, (iii) Depreciation. (06 Marks)  
b. Explain briefly the causes of depreciation. (06 Marks)  
c. A CNC machine costs ₹30,00,000 is estimated to serve for 8 years after which its salvage value is estimated to be 2,50,000. Find:  
i) Book value of machine after 4<sup>th</sup> and 6<sup>th</sup> year by declining balance method.  
ii) Depreciation fund during 6<sup>th</sup> and 7<sup>th</sup> year by SOYD method.  
iii) Depreciation charge by straight line method of depreciation. (08 Marks)



**PART – B**

- 5 a. Differentiate between estimating and costing. (06 Marks)
- b. Two operators involved in forging machine for 96 jobs. Each weighing 5 kg in a shift of 8 hours. They are paid at the rate of ₹500 and ₹400 per day. The forged material costs ₹40 per kg. If the factory and administrative costs put together twice of the labour cost. Find the cost of production per unit. (07 Marks)
- c. A company produces components for tractors. The selling expenses are  $\frac{1}{4}$  <sup>th</sup> of the factory cost. If the material cost, labour cost and factory overhead charges in the ratio 1:4:2, if the material cost is ₹3000, what profit is made, if the management wants to make a profit of 10% on total cost? Determine the selling price. (07 Marks)
- 6 a. Write a note on current assets and liabilities. (04 Marks)
- b. Differentiate between balance sheet and profit and loss account. (08 Marks)
- c. Following is the financial status of a company as on 31<sup>st</sup> March 2015. Prepare a balance sheet.

Particulars	Amount in (₹)	Particulars	Amount in (₹)
Share capital	2,00,000	Cash at bank	2,500
Sundry creditors	39,500	Sundry debtors	87,490
Bills payable	33,780	Land & Building	1,48,500
Bank overdraft	59,510	Goodwill	000
Reserves	50,000	Plant & Machinery	1,12,950
From profit and loss a/c	39,690	Provision for Tax	40,000
Stock	1,11,040		

(08 Marks)

- 7 a. Briefly explain: i) Liquidity ratios, ii) Activity ratios. (10 Marks)
- b. Assume that a firm has owners equity of ₹1,00,000. The ratios of firm are:  
 Current debt to total debt = 0.40  
 Total debt to owners equity = 0.60  
 Fixed assets to owners equity = 0.60  
 Total assets turnover = 2 times  
 Inventory turnover = 8 times  
 From the given data calculate total debt, inventory, fixed assets, total capital, total assets and sales. (10 Marks)
- 8 a. What is financial planning? List and explain essentials of financial planning. (08 Marks)
- b. Explain briefly the advantages and limitations of budgeting. (06 Marks)
- c. Write notes on:
  - i) Production budget and manufacturing budget
  - ii) Capital expenditure budget (06 Marks)

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