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10ME71

Seventh Semester B.E. Degree Examination, June/July 2019

**Engineering Economy**

Time: 3 hrs.

Max. Marks:100

- Note:** 1. Answer any FIVE full questions, selecting at least TWO questions from each part.  
2. Use of discrete interest factor table is allowed.  
3. Assume any missing data suitably.

**PART – A**

- 1 a. Discuss why engineers have to study economics. (10 Marks)  
b. Differentiate between tactics and strategies give an illustration. (10 Marks)
- 2 a. State and explain any five conditions for present worth comparison. (10 Marks)  
b. A precision machining component manufacturing company wants to expand its operation. For this purpose it has decided to add a CNC machine. One of the following two machine is to be selected based exclusively on future worth method of comparison:  
Machine useful life = 4 years  
Interest rate = 12%

	M <sub>1</sub>	M <sub>2</sub>
Initial cost (Rs.)	4,00,000	8,00,000
Salvage value at the end of life period (Rs.)	2,00,000	5,50,000
Annual maintenance cost (Rs.)	40,000	Nil

- Which of the above machine M<sub>1</sub>, M<sub>2</sub> to be selected? (10 Marks)
- 3 a. What is sinking fund? Explain its concept and philosophy. (10 Marks)  
b. Jyothy Industries is considering to purchase a semi-automated welding machine for one of its export order, at an estimated initial cost of Rs.85,000. After a service life of 5 years its salvage value is estimated to be Rs.6000. Maintenance and operating costs are expected to be Rs.8000 for the first year of operation which increases by Rs.1500 per every year of additional use. Determine what annual saving must be obtained through the use of this equipment to make the purchase of this equipment economically justifiable. Consider interest rate of 10%. (10 Marks)
- 4 a. What is depreciation? List and briefly explain the causes. (10 Marks)  
b. A CNC machine costs Rs.30,00,000. Its service life is 8 years and its salvage value after 8 years is Rs.2,50,000, Find:  
i) Depreciation fund at the end of fifth year by fixed percentage method and declining balance method.  
ii) Book value of the machine after 4<sup>th</sup> year by declining balance method.  
iii) Book value after 6<sup>th</sup> year by declining balance method. (10 Marks)

**PART – B**

- 5 a. What is selling price? How selling price for a component is fixed? Explain its components. (10 Marks)  
b. Find the factory cost of a forged hammer made from solid cast iron press of circular cross section of 30 cm dia and 160 mm length. Time taken to forge is 150 min and labour cost is Rs.22/hour (rate). Factory overheads are 40% of direct labour cost, material cost of cast iron is Rs.12/kg. Density of cast iron = 6.8 gm/cm<sup>3</sup>. (10 Marks)

- 6 a. What is balance sheet? Explain its importance. Prepare an illustrative balance sheet showing different accounts (model balance sheet). (10 Marks)  
b. What are the sources of financial information? Briefly explain any of the two. (10 Marks)
- 7 a. List and explain different types of financial ratios, briefly. (10 Marks)  
b. What are the advantages and limitations of ratio analysis? (10 Marks)
- 8 a. What is profit planning? What are the objectives? (10 Marks)  
b. What are the types of budgets? Explain. (10 Marks)

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