CBCS SCHEME - Make-Up Exam

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BAU654D

Sixth Semester B.E./B.Tech. Degree Examination, June/July 2025
Engineering Economics

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	Explain briefly the importance of decision making in engineering economics.	10	L2	CO1
	b.	Discuss the role played by intuition and analysis in decision making with suitable examples.	10	L1	CO1
		OR			
Q.2	a.	Explain the following : i. Cash flow diagrams ii. Law of diminishing returns.	10	L2	CO1
	b.	A person takes loan of 10,000 form a bank at 12% per annum, Find the amount to be repaid at the end of five (5) years. If the interest is compounded : yearly i. Half yearly ii. Quarterly iii. Monthly iv. Continuously.	10	L2	CO1
		Module – 2			
Q.3	a.	A working woman is planning for her retired life. She has 20 more years of service. She would like to have an annual equivalent amount of Rs.3,00,000 starting from the end of the first year of her retirement. Find the single amount that should be deposited now so that she receives the above mentioned annual equivalent amount at the end of every year for 20 years after her retirement. Assume i = 12%, compounded annually.	10	L3	CO2
	b.	What are the conditions for present worth comparison of alternatives and explain the future worth method of comparison.	10	L1	CO2
		OR			
Q.4	a.	The cash flows of two projects proposals are as given below. Each of the projects has an expected life of 10 years. Select the best project based on present worth method of comparison using an interest rate of 10 % compounded annually.	10	L3	CO2
	b.	The cost of erecting an oil well is Rs. 1,50,00,000. The annual equivalent yield form the oil well is Rs. 30,00,000. The salvage value after its useful life of 10 years is Rs. 2,00,000. Assuming an interest rate of 8% compounded annually, find out whether the creation of the oil well is financially feasible, based on the present worth method.	10	L2	CO2

	Initial outlay (Rs)	Annual equivalent revenue (Rs)	Salvage value after 10 years (Rs)
Project 1	–7,50,000	2, 00, 000	50,000
project 2	–9,50,000	2,25,000	1,00,000

Module – 3

Q.5	**a.**	A company must decide whether to by Machine A or Machine B. At 10% interest rate, which machine should be purchased? Use future worth method.	**10**	**L3**	**CO3**

	Machine A	Machine B
Initial cost (Rs.)	3,00,000	6,00,000
Useful life (years)	4	4
Salvage value at the end of machine life (Rs.)	2,00,000	3,00,000
Annual maintenance (Rs.)	30,000	0

	b.	A transformer costs Rs. 15,00,000 and has a useful life of 25 years. If the scrap value of the transformer is 1,00,000 and the rate of annual compound interest is 10%. Then calculate the amount to be saved annually for the replacement of the transformer after the end of 25 years.	**10**	**L2**	**CO3**
		OR			
Q.6	**a.**	What is sinking fund? Explain its concept and philosophy.	**10**	**L1**	**CO3**
	b.	Tyothy 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 it 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 which 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**	**L1**	**CO3**
		Module – 4			
Q.7	**a.**	Differentiate between estimation and testing.	**5**	**L1**	**CO4**
	b.	Explain brifely the objectives of costing.	**5**	**L1**	**CO4**
	c.	An investment of Rs. 8,000 is made by Suresh for this manually operated pen machine. Its salvage value after 5 years is Rs1000. Find the straight line depreciation expense? Find the book value at the end for each year and also find the depreciation fund collected at the end of 4^{th} years.	**10**	**L3**	**CO4**
		OR			
Q.8	**a.**	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 Rs. 500 and Rs. 400 per day. The forged material costs Rs 40 per kg. If the factory and administrative costs put together twice of the labour cost. Find the cost of production per unit.	**10**	**L2**	**CO4**
	b.	A company produces components for tractors. The selling expenses are $1/4^{th}$ 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 Rs. 3000, what profit is made, if the management wants to make a profit of 10% on total cost? Determine the selling price.	**10**	**L3**	**CO4**

		Module – 5			
Q.9	a.	What are the sources of financial information? Explain each one of them briefly.	10	L2	CO5
	b.	Explain the following : i. Ledger ii. Current assets iii. Fixed liabilities iv. Creditors v. Single entry system for accounting.	10	L2	CO5
		OR			
Q.10	a.	What is Balance Sheet? Prepare a model balance sheet showing all the accounts.	10	L1	CO5
	b.	Following is the financial status of the company as on 31st March 2015. Sundry debtors – 10,000 Cash in hand – 2,200 Bank loans – 40,000 Bills payable – 20,000 Equity shares – 1,13,000 Land and building – 50,000 Plant and machinery – 90,000 Inventories – 15,000 Creditors – 30,000 Bank balance – 16,000 Prepare a balance sheet as on 31st March 2015.	10	L3	CO5

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