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Sixth Semester B.E. Degree Examination, July/August 2022 Engineering Economy

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Explain Intution and Analysis with respect to decision making. (10 Marks)
- b. Explain briefly the law of supply and law of demand. (10 Marks)

OR

- 2 a. A person who is now 35 years old is planning for his retired life. He plans to invest an equal sum of Rs.10,000 at the end of every year for the next 25 years starting from the end of the next year. The bank gives 20% interest rate, compounded annually. Find the maturity value of his account when he is 60 years old. (10 Marks)
- b. A company wants to set up a reserve which will help the company to have annual equivalent amount of Rs. 10,00,000 for next 20 years towards its employees welfare measures. The reserve is assumed to grow at the rate of 15% annually. Find the single payment that must be made now as the reserve amount. (10 Marks)

Module-2

- 3 a. Explain the conditions for present worth comparison. (10 Marks)
- b. Explain the "Rule 72" with respect to present worth comparison. (10 Marks)

OR

- 4 a. Novel investment Ltd. accepts Rs. 10,000 at the end of every year for 20 years and pays the investor Rs.8,00,000 at the end of 20th year. Innovative investment ltd accepts Rs.10,000 at the end of every year for 20 years and pays the investor Rs.15,00,000 at the end of the 25th year. Which is the best investment alternative? Use present worth base with $i = 12\%$ (10 Marks)
- b. A certain individual firm desires an economic analysis to determine which of the two machines is attractive in a given interval of time. The minimum attractive rate of return for the firm is 15%. The following data is used for analysis.

	Machine (X)	Machine (Y)
First cost	Rs.1,50,000	Rs.2,40,000
Estimated life	12 years	12 years
Salvage value	Rs.0	Rs. 6,000
Annual maintenance	Rs.0	Rs.4,500

Which machine do you choose? Base your answer on Annual Equivalent cost? (10 Marks)

Module-3

- 5 a. Define Depreciation. What are the reasons for depreciation? Briefly explain. (10 Marks)
- b. Explain briefly different methods of depreciaton. (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.

OR

- 6 a. A CNC machine costing Rs.22,00,000/- is estimated to serve for 5 years after which its salvage value is estimated to be Rs.2,00,000/- . Find
 (i) Depreciation during third year by fixed percentage method.
 (ii) Book value of the machine after 2 years by sum of year's digits method. (10 Marks)
- b. A device is purchase for Rs.1000/- and has no salvage value. It is expected to serve for 5 years. Calculate the book value by sum of years digit method and double declining balance method. (10 Marks)

Module-4

- 7 a. Explain the reasons for replacements. (10 Marks)
 b. Differentiate between individual and group replacements. (10 Marks)

OR

- 8 a. What do you understand by replacement analysis and explain its importance. (10 Marks)
 b. Explain replacements of assets by considering time value of money. (10 Marks)

Module-5

- 9 a. Explain the need for Estimating and Costing. (10 Marks)
 b. Explain the elements of product cost. (10 Marks)

OR

- 10 a. MICO factory produces 500 spark plugs a day involving direct material cost Rs.40,000 direct labour cost of Rs.35,000 and factory overhead Rs.10,000. Assume profit of 15% of the selling price and selling overhead to be 30% of the factory cost. Calculate the selling price of one spark plug. (10 Marks)
 b. Explain the methods of costing. (10 Marks)

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