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Total Number of Pages: 02

Course: B.Tech
Sub_Code: REN4E001/REN3E001

4th Semester Back Examination: 2024-25

SUBJECT: Engineering Economics

BRANCH(S): ELECTRICAL & C.E, AEIE, AUTO, BIOTECH, CIVIL, CSE, CSEAIML, CSEDS, CST, ECE, EEE, ELECTRICAL, ENV, ETC, IT, MECH, METTA, MINERAL, MME

Time: 3 Hours

Max Marks: 100

Q.Code: S247

Answer Question No.1 (Part-I) which is compulsory, any eight from Part-II and any two from Part-III.

The figures in the right hand margin indicate marks.

Part-I

Q1 Answer the following questions: (2 x 10)

- Define Engineering Economics.
- State the law of variable proportion.
- What do you mean by Break-even Point?
- Distinguish between nominal and effective interest rates.
- Define Present Worth method in project evaluation.
- What is meant by Straight Line Method of depreciation?
- Mention any two functions of the Central Bank.
- What is opportunity cost? Give an example.
- State one difference between GDP and GNP.
- Mention two causes of depreciation of a capital asset.

Part-II

Q2 Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve) (6 x 8)

- Discuss the various types of elasticity of demand with examples.
- Explain Law of Returns to Scale with appropriate diagrams.
- Briefly explain cost-output relationship in the short run.
- Discuss the concept of Internal Rate of Return (IRR) and how is it different from Net present values?
- Explain the causes and types of inflation.
- Evaluate the Future Worth of a project that gives ₹1,000 annually for 4 years at an interest rate of 8% compounded annually. Also, draw the cash flow diagram.
- Explain the various functions of a central bank and how they contribute to financial stability.

- h) Discuss the relationship between price elasticity of demand and total expenditure.
- i) What is the Law of Supply? Illustrate it using a supply schedule and diagram. Discuss possible exceptions to the law.
- j) Differentiate between monopolistic competition and oligopoly with reference to product differentiation and market power.
- k) Differentiate between microeconomics and macroeconomics. Explain with suitable examples how both branches are relevant to engineering economic decisions.
- l) Annual Worth Method is often preferred for mutually exclusive projects with unequal lives. Justify this statement with a solved numerical example.

Part-III

Only Long Answer Type Questions (Answer Any Two out of Four)

(16 x 2)

- Q3** XYZ and ABC are two mutually exclusive project. The cash flows are shown below. Calculate projects' NPV at 9% and IRR. Why these two methods rank projects differently? Show your calculations. **(16)**

Project	Year-0	Year-1	Year-2	Year-3
XYZ	-3360	2800	1400	280
ABC	-3360	280	1680	3020

- Q4** What is National Income? Explain in detail the three methods of measuring national income. Discuss their merits and limitations. **(16)**

- Q5** Explain the three stages of short run production function with a suitable example. Where a rational producer produces and why? **(16)**

- Q6** "In a perfectly competitive market, no single firm can influence the market price, yet the market is perfectly efficient." Discuss this statement with reference to the assumptions and long-run implications of perfect competition. **(16)**