

# CBCS SCHEME

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15MA61

## Sixth Semester B.E. Degree Examination, Dec.2018/Jan.2019 Engineering Economics

Time: 3 hrs.

Max. Marks: 80

- Note: 1. Answer any FIVE full questions, choosing one full question from each module.  
2. Use of Interest factor tables permitted.*

### Module-1

- 1 a. With a neat block diagram, explain the 'Problem solving process' used in engineering economics. (08 Marks)  
b. Sketch the tactics and strategy on a graph and briefly explain the relationship between them. (08 Marks)

OR

- 2 a. Show the nature of 'Demand curve' and 'Supply curve' and brief explain the factors influencing 'demand' and 'supply'. (10 Marks)  
b. Explain the difference between 'intuition' and 'analysis' in engineering economic decisions. (06 Marks)

### Module-2

- 3 a. Compare "Simple interest" with "Compound interest" and derive an expression for 'effective interest' under 'continuous compounding'. (08 Marks)  
b. A sports person wants to invest Rs.10 lakhs at the end of this year and reduce the annual investment by Rs.1 lakh every year for the next five years. What is the maturity amount at the end of 6 years, if the interest rate is 15%? (08 Marks)

OR

- 4 a. What is a 'Cash flow diagram'? Using CFD derive an expression for "Equal payment series compound amount factor". (08 Marks)  
b. A person needs a sum of Rs.2.0 lakhs for a function to be held after 15 years from now. If he plans to set aside an equal annual amount, what should be the amount? If he wants to set aside a lumpsum amount now, what is its value? Interest rate used is 15%. (08 Marks)

### Module-3

- 5 a. The following data refers to two alternatives 'A' and 'B'. The interest rate is 10%. Suggest which one is better using 'Present worth' criterion. (10 Marks)

Particulars	Alternative 'A'	Alternative 'B'
First (Investment) cost Rs.	3500	5000
Annual Revenue Rs.	1900	2500
Annual cost Rs.	645	1383
Useful life	4	8
Scrap value Rs.	Zero	Zero

- b. How do you compare assets with unequal lives? Explain briefly. (06 Marks)

OR

- 6 a. Mention and briefly discuss the six conditions for “present worth comparisons”. (06 Marks)  
 b. There are two plans for a project with cash flow details as given below. If 10% interest is used, determine which plan is to be selected based on “Annual equivalent criterion”.

Particulars	Plan ‘P’	Plan ‘Q’
Initial Investment (Rs.)	35,000	55,000
Useful life in years	10	15
Scrap value of assets (Rs.)	5000	Zero
Annual O&M costs (Rs.)	6000	3200

(10 Marks)

**Module-4**

- 7 a. Define “Internal Rate of Return (IRR)”. List the IRR misconceptions and explain any one ‘misconception’ briefly. (06 Marks)  
 b. A CNC machine was purchased for Rs.5 lakhs with an estimated life of 10 yrs and scrap value of 0.5 lakhs. Compute :  
 (i) Depreciation fund after 5 yrs using straight line method.  
 (ii) Annual depreciation under sinking fund method using 11% interest.  
 (iii) Depreciation during 3<sup>rd</sup> year under SYD method.  
 (iv) Rate of depreciation under Declining and Double declining balancing method.

(10 Marks)

OR

- 8 a. What is ‘depreciation’? What are the causes for it? (06 Marks)  
 b. A company produces 1000 readymade instruments, in a day. The corresponding DMC and DLC are Rs.20000 and Rs.25000 respectively. The overhead expenses are Rs.15000 and selling oncost is 25% of factory cost. Determine the selling price of each instrument, so as to realize a profit of 15% on selling price. (10 Marks)

**Module-5**

- 9 a. Define ‘Book keeping’. What are its objectives? (08 Marks)  
 b. Distinguish between ‘Profit and Loss Account’ with a ‘Balance sheet’. Provide standard proforma used for preparing them. (08 Marks)

OR

- 10 a. What is “Ratio Analysis”? How are the ratios classified? Explain any one group briefly. (08 Marks)  
 b. Discuss the advantages and limitations of ‘Ratio analysis’ or “Accounting ratios”. (08 Marks)

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