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B. Tech
HSSM 4201

Fourth Semester Examination – 2007

ENGINEERING ECONOMICS AND COSTING

Full Marks – 70

Time – 3 Hours

Answer Question No. 1 which is compulsory
and any five from the rest.

The figures in the right-hand margin
indicate marks.

1. Answer the following questions : 2×10
- (a) Define 'engineering economics'.
 - (b) What do you mean by 'annuity due' ?
 - (c) What is 'annual equivalent' ?
 - (d) Define 'compound interest'.
 - (e) What is 'future worth' ?
 - (f) What do you mean by 'yield' ?

P.T.O.

- (g) What is 'amortisation' ?
 (h) Define 'sensitivity'.
 (i) What is 'period cost' ?
 (j) What is 'cutoff rate of return' ?

2. The current lease rates quoted by the First Leasing Company Ltd. on its lease contracts are :

- (i) Rs. 18 / Rs. 1,000 / month and
 (ii) Rs. 12.5 / Rs. 1,000 / month for 3 years and five years terms respectively.

While the monthly lease rentals on the 3-years contract are payable in arrears, those for the 5-years contract are payable in advance. Assuming 10% marginal cost of debt to the lessee, calculate the present values of the lease payments. 10

3. Explain the importance of equivalent annual worth comparison. How can you compare the assets with unequal life ? Explain with the help of one example. 10

4. The particulars of two projects are given below :

Particulars	Project A	Project B
Initial Outlay	Rs. 10,000	Rs. 20,000
Cash inflow after taxes :		
Year-end 1	Rs. 8,000	Rs. 8,000
2	Rs. 7,000	Rs. 9,000
3	Nil	Rs. 7,000
4	Nil	Rs. 6,000
Service Life (in years)	2	4

Required rate of return : 0.10

Which of the above two projects would you select ? Explain. 10

5. (a) Differentiate between straight line method and written down value method of charging depreciation. 5
 (b) Discuss multiple-parameter sensitivity with one example. 5
6. The following figures relate to a manufacturing company ?

	2005	2006
	Rs.	Rs.
Sales	50,000	80,000
Profit	10,000	25,000

Find out : 10

- (a) P/V ratio
- (b) Fixed Cost
- (c) Break-even point
- (d) Margin of safety in 2006.

7. From the following data, compute material variances : 10

	STANDARD		ACTUAL	
	Quantity (Units)	Rs.	Quantity (Units)	Rs.
A	3500	10	3700	12
B	1500	21	1650	20
C	1000	33	1250	36

IWL

8. Write notes on : 5×2

- (a) Cost reduction
- (b) Process cost system.