Fifth Semester B.E. Degree Examination, Dec.08/Jan.09
Engineering Economics

Time: 3 hrs. Max. Marks:100

Note: 1. *Answer any FIVE full questions choosing at least two questions from each part.*
2. *Interest factors tables permitted.*

Part A

1 a. Explain with suitable / relevant examples different engineering economic problems an engineer confronts with, in day-to-day life. (05 Marks)

b. An engineering economist solves problems and takes appropriate decisions using time honoured scientific method. Explain with a suitable diagram. (05 Marks)

c. Explain how cash flow diagrams (CFD) are helpful to the decision maker to understand and solve engineering economic problems. Draw neat sketches of different versions of cash flow diagrams, and give borrower's and lender's perspectives for cash flow diagrams. (10 Marks)

2 a. A person takes a loan of Rs.12000/- from a bank at an interest of 18% P.A. Find the amount if the interest is compounded, i) Annually ii) Half-yearly (Semi-Annually) iii) Quarterly and iv) Monthly. (12 Marks)

b. Calculate the effective interest rate "ieff" of a nominal compound interest rate of 18% P.A., when compounded i) Half yearly and ii) Monthly. (08 Marks)

3 a. List and explain the conditions for present worth comparisons. (10 Marks)

b. Two devices are available to perform a necessary function for 3 years. The initial cost (negative) for each device at time 0 and subsequent annual savings (positive) are shown in the following table. Compare the net present worth of these two devices when the required interest rate is 8%. Draw the cash flow diagram. (10 Marks)

	YEAR			
	0	1	2	3
Device A	12000	5500	5500	5500
Device B	15000	6000	6000	8000

(P/A, 8, 3) = 2.5771; (P/A, 8, 2) = 1.78326; (P/F, 8, 3) = 0.79383

4 a. With examples give definitions of Asset life. Why land prices do not get depreciated? (10 Marks)

b. Explain the concept and philosophy of use of a sinking fund. (10 Marks)

Part B

5 a. What do you understand by Minimum Acceptable Rate of Return (MARR) and Internal Rate of Return (IRR). (10 Marks)

b. Explain with examples the various causes of depreciation. (10 Marks)

6 a. With a neat sketch explain the composition of costs traditionally used in accounting for the price of a manufactured product. (10 Marks)

b. Explain life cycle costing with a neat sketch. (10 Marks)

7 a. Write the balance sheet equation. Following is the year end details of a company:

Equity	200000
Bank Balance	10000
Dividend payable	72000
Provision for tax	40000
Preference shares	135000
Land and building	200000
Debtors	265000
Bills payable	20000
Plant and equipment	80000
Bills receivable	20000
General reserves	40000
Cash in hand	15000
Stock	77000
Creditors	160000

Prepare the Balance sheet. (10 Marks)

b. Define the following with suitable equations: i) current ratio ii) acid test ratio iii) debt equity ratio iv) Gross profit ratio v) Net profit margin ratio. (10 Marks)

8 Write short notes on any four of the following:

a. Intuition an analysis. b. Present worth by the "72 rule".
c. Annuity contract for guaranteed income. d. Tactics and strategy.
e. Comparisons of assets having unequal lives f. Sales budget OR Production budget. (20 Marks)