Name : ....

Roll No. : ....

Invigilator's Signature : ....

CS/B.Tech /ME/PE/AUE/SEM-7/HU-702/2012-13

2012
ENGINEERING ECONOMY & FINANCIAL MANAGEMENT

Time Allotted : 3 Hours   *Full Marks* : 70

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

GROUP – A
(Multiple Choice Type Questions)

1. Choose the correct alternatives for any *ten* of the following :

    $10 \times 1 = 10$

    i)   Break-even point is a point at which the firm makes

          a)   zero profit   b)   normal profit

          c)   super profit   d)   loss.

    ii)   Margin of Safety means

          a)   BEP sales (–) Actual sales

          b)   Actual sales (–) BEP sales

          c)   Budgeted sales (–) BEP sales

          d)   Fixed assets.

iii) Working Capital means

    a) Current Assets (–) Non-current Liabilities

    b) Non-current Assets (–) Current Liabilities

    c) Current Assets (–) Non-current Liabilities

    d) Current Liabilities.

iv) Current ratio measures

    a) the solvency of the business

    b) the liquidity of the business

    c) the profitability of the business

    d) the efficiency of the business.

v) Materials issued are priced at the latest purchase in

    a) FIFO   b) Simple average

    c) HIFO   d) LIFO.

vi) Marginal costing is

    a) a system of costing

    b) a method of costing

    c) a distinct technique of costing

    d) GP ratio.

vii) Consumer wants

    a) maximum utility

    b) minimum utility

    c) minimum profit & maximum utility

    d) none of these.

viii) Cash flow after tax is computed as

    a) PAT + Depreciation   b) PAT–Depreciation

    c) PAT   d) EBIT.

ix) MC curve intercepts AC when

    a) AC is maximum   b) AC is minimum

    c) AC is rising   d) AC is constant.

x) Cross elasticity of demand arises by

    a) substitute goods

    b) complementary goods

    c) Giffen goods

    d) none of these.

xi) The ideal standard Liquid Ratio is

    a) 1 : 1   b) 2 : 1

    c) 1 : 2   d) 2 : 3.

xii) Financial Leverage is also called

    a) Financial Planning

    b) Return on Equity

    c) Return on Capital employed

    d) Trading on Equity.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following.   3 × 5 = 15

2. a) Why does demand curve slope downward ?

    b) A buyer's demand for a commodity *X* at a price of Rs. 10 is 2000 units. If the demand is unit elastic, what will be his demand for that commodity at a price of Rs. 25 per unit ?   2 + 3

3. Prove the relationship of price with marginal revenue and price elasticity of demand *i.e.* MR = P $(1-1/e_p)$.   2 + 3

4. Define production function. State Cobb-Douglas type production function & explain Returns to Scale concept with this function.

5. What do you mean by NPV ? Why do you consider this to be so important ? 2 + 3

6. From the following data available from the record of a factory find out the (i) Prime Cost (ii) Works Cost (iii) Cost of Production (iv) Cost of Sales :

Cost of Raw Materials	Rs.	80,000
Direct Wages	Rs.	1,20,000
Salaries of the permanent staff	Rs.	60,000
Rent & Rates etc.	Rs.	10,000
Selling Expenses	Rs.	30,000
General Expenses	Rs.	20,000

GROUP – C
(Long Answer Type Questions)

Answer any *three* of the following. 3 × 15 = 45

7. Write notes on any *three* of the following : 3 × 5

   i) Price leadership model

   ii) Monopoly

   iii) Economic Order Quantity

   iv) Demand Supply Equilibrium

   v) ABC analysis.

8. a) Define working capital management.

   b) From the following information calculate working capital required :

   Annual production – 24,000 units. Expenses per unit : Raw material – Rs. 6, Direct Labour – Rs. 3. Overhead – Rs. 2. Selling price per unit is Rs. 15. Raw materials are in stock on an average for 2 months, duration of the production process is half month. Finished goods are in stock for one and half months, credit allowed to customers is two months and obtained from the suppliers of raw material is one and half months. Lag in payment of wages and overhead are half month.   5 + 10

9. a) From the following information, calculate Current ratio, Capital gearing ratio, Debt equity ratio and Stock turnover ratio from the following data.

   Equity Share Capital – Rs. 5,00,000. Reserve and surplus – Rs. 1,00,000.

   10% Preference Share Capital – Rs. 2,00,000. 12% Debentures – Rs. 3,00,000.

   Creditors – Rs. 1,50,000. Bills Payable – Rs. 20,000. Bank Overdraft – Rs. 10,000. Outstanding Expenses – Rs. 20,000. Fixed Assets 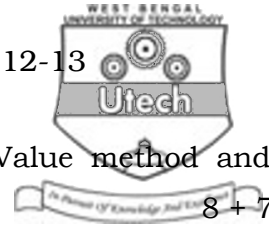– Rs. 8,00,000. Stock – Rs. 2,00,000. Debtors – Rs. 80,000. Bills receivable – Rs. 30,000. Prepaid expenses – Rs. 20,000. Bank – Rs. 1,30,000. Short term Investment – Rs. 30,000. Preliminary expenses – Rs. 10,000. Cost of goods sold – Rs. 10,00,000.

b) Compare between the Net Present Value method and Internal Rate of Return method. 8 + 7

10. a) Distinguish between standard costing and budgetary control.

b) A factory is currently running at 60 % capacity and produces 12,000 units at an average cost of Rs. 80 per unit as follows :

Material Rs. 50, Labour of Rs. 10, Factory overhead Rs. 12 (Rs. 48,000 fixed), Administrative overhead Rs. 6 (Rs. 24,000 fixed), Selling overhead Rs. 2 (variable). Estimate the profit of the factory at 60% and 100% of works, if the selling price of the commodity is Rs. 100 per unit.

5 + 10

11. a) A company is considering to purchase a new machine for Rs. 2,40,000.

The following data are available in this respect :

Year	Earnings before depreciation & tax
	Rs.
1	80,000
2	80,000
3	70,000
4	50,000
5	60,000
6	40,000

Corporate tax rate is 40%. Life of the machine is 6 years. Discount rate = 10% p.a.

Depreciation is to be calculated on straight line method. Should the Company purchase the machine ?

b) Find the profit maximizing output for a firm with the total cost function TC = 4 + 97q − 8·5 q^2 + 1/3 q^3 and total revenue function TR = 58 − 0·5 q^2. 7 + 8

12. a) Gross Profit Rs. 5,00,000, GP Ratio 20%, Stock Turnover Ratio 3 months, Debtors Turnover Ratio 3 months, Creditors Turnover Ratio 3 months, Closing Stock is more than Opening stock by Rs. 15,000. Find Sales, Debtors, Closing Stock, Opening Stock and Creditors.

b) Discuss the Operating Cycle concept of a firm. What are the factors on which the duration of the cycle depend ?

10 + (2 + 3)

13. Gama & Co. wants to replace its old machine with new automatic machine. It has two models namely Model 1 & Model 2 in consideration at the same cost of Rs. 5,00,000 each. Salvage value of the old mahcine is Rs. 1,00,000. The utilities of the existing machine can be used if the company selects Model 1. Again additional costs of utilities purchased in that case are Rs. 1,00,000. If the company purchases Model 2 then all the existing utilities have to replaced with new utilities costing Rs. 2,00,000. The salvage value of old utilities will be Rs. 20,000. The cash flows are expected to be :

Year	Model 1	Model 2
1	1,00,000	2,00,000
2	1,50,000	2,10,000
3	1,80,000	1,80,000
4	2,00,000	1,70,000
5	1,70,000	40,000
Salvage value at the end of 5 year	50,000	60,000
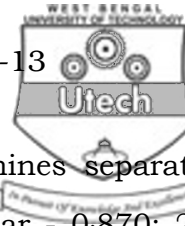
You are required to compute for two machines separately (when PV factor at 15 % is given for 1st year - 0·870; 2nd year - 0·756; 3rd year - 0·658; 4th year - 0·572, 5th year - 0·497) :

a)   Net Present Value

b)   Discounted Pay Back Period

c)   Desirability factor

Advise which of the machines to be selected.

5 + 5 + 3 + 2