CS/M.Tech (IEM)/SEM-2/IEM-201/09
MANAGERIAL ECONOMICS (SEMESTER - 2)

1. .....
Signature of Invigilator

2. .....
Signature of the Officer-in-Charge

Reg. No. | | | | | | | | | | | | | | |

Roll No. of the Candidate | | | | | | | | | | | | | | |

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CS/M.Tech (IEM)/SEM-2/IEM-201/09
ENGINEERING & MANAGEMENT EXAMINATIONS, JULY – 2009
MANAGERIAL ECONOMICS (SEMESTER - 2)

Time : 3 Hours] [Full Marks : 70

INSTRUCTIONS TO THE CANDIDATES :

1. This Booklet is a Question-cum-Answer Booklet. The Booklet consists of **32 pages**. The questions of this concerned subject commence from Page No. 3.
2. You have to answer the questions in the space provided marked 'Answer Sheet'. Write on both sides of the paper.
3. **Fill in your Roll No. in the box** provided as in your Admit Card before answering the questions.
4. Read the instructions given inside carefully before answering.
5. You should not forget to write the corresponding question numbers while answering.
6. Do not write your name or put any special mark in the booklet that may disclose your identity, which will render you liable to disqualification. Any candidate found copying will be subject to Disciplinary Action under the relevant rules.
7. **Use of Mobile Phone and Programmable Calculator is totally prohibited in the examination hall.**
8. You should return the booklet to the invigilator at the end of the examination and should not take any page of this booklet with you outside the examination hall, **which will lead to disqualification**.
9. Rough work, if necessary is to be done in this booklet only and cross it through.

No additional sheets are to be used and no loose paper will be provided

FOR OFFICE USE / EVALUATION ONLY

Marks Obtained

Question Number											***Total Marks***	***Examiner's Signature***
Marks Obtained												

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Head-Examiner/Co-Ordinator/Scrutineer

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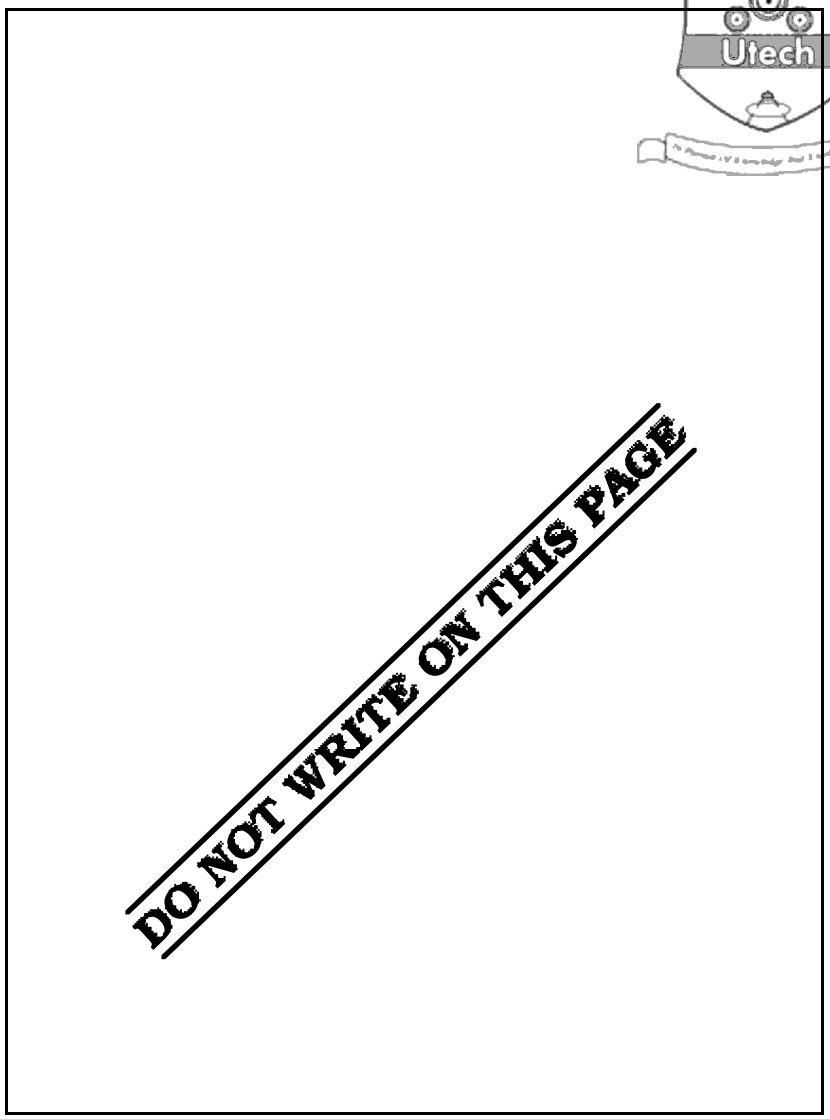
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MANAGERIAL ECONOMICS
SEMESTER - 2

Time : 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.

Answer any *five* of the following. 5 ∞ 14 = 70

1. Given $Q = 100K^{0.5} L^{0.5}$, $C^* =$ Rs. 65,000, $w =$ Rs. 1,300 and $r =$ Rs. 2,500. Determine the amount of labour and capital that the firm should use in order to maximize output. What is the level of output ? Exlain the concept of production function in detail. 6 + 8

2. Mr. Banerjee, the owner and manager of the Photo Duplicating Service located near a major univesity, is contemplating keeping his shop open after 6 PM and until midnight. In order to do so, he would have to hire additional workers. He estimates that the additional workers would generate the following total output (where each unit of output refers to 100 pages duplicated). If the price of each unit of output is Rs. 20 and each worker hired must be paid Rs. 60 per day, how many workers should Mr. Banerjee hire ?

Workers hired	0	1	2	3	4	5	6
Total product	0	14	24	32	38	42	44

3. Suppose that Tata's consultant estimated the following regression equation for Nano automobiles :

$$Q_1 = 100{,}000 - 10P_1 + 2N + 50I + 30P_M - 1000P_P + 3A$$

Where Q_1 = quantity demanded per year of Nano automobiles

P_1 = price of Nano automobiles

N = population of India in millions

I = per capita disposable income

P_M = price of Maruti automobiles

P_P = real price of petrol

A = advertising expenditures by Nano.

a) Inidcate the change in the number of Nanos purchased per year (Q 1) for each unit change in independent and explanatory variables.

b) Find the value of Q_1 , if average value of P_1 = Rs. 1.1 lac, N = 200 million I = 20,000, P_M = Rs. 1.5 lac, P_P = Rs. 350, A = Rs. 1 million.

c) Derive the equation of the demand curve for Nanos. 4 + 4 + 6

4. Discuss the utility of elasticity measures. Explain with example how a manager can qualitatively improve his decision with the help of elasticity measures.

5. Marginal rate of technical substitution is nothing but elasticity of substitution. Explain after deriving the expression for the same. How does the shape of isoquants vary with different industries ?

6. Three *B*-School graduates decide to open a business, and all three devote their full time to its management. What cost would you assign to their time ? Is this an explicit or implicit cost ? Explain suitably.

Based on a consulting economist's report, the total and marginal cost functions for Advanced Electronis, Inc. are

$$TC = 200 + 5Q - 0.04Q^2 + 0.0001Q^3$$

$$MC = 5 - 0.08Q + 0.003Q^2$$

The president of the company determines that knowing only these equations is inadequate for decision making. You have been directed to do the following :

a) Determine the level of fixed cost (if any) and equations for average total cost, average variable cost, and average fixed cost.

b) Determine the rate of output that results in minimum average variable cost.

c) If fixed costs increase to Rs. 2,50,000, what output rate will result in minimum average variable cost ? 4 + 5 + 5

7. a) Explain the concept of Margin of Safety with reference to B/E analysis.

b) A manufacturing organization is having the following data :

	Prod. A	***Prod. B***	
Sales/unit	100.00	100.00	
Var. cost	60.00	70.00	
M/C Hrs./Pc.	0.5	0.4	M/c is available for 40000 Hrs.
Demand	60000	Unlimited	

Total fixed cost is Rs. 10,00,000.00

Find out B/E pt. if

a) only product *A* is produced

b) only product *B* is produced

c) both products are produced ?

What is the product – mix for maximum profit ? 6 + 8

8. A manufacturing company wishes to buy a new capital equipment. The relevant data table is as follows :

Yr.	***1***	***2***	***3***	***4***	***5***	***6***
Investment	5,00,000	2,00,000	–	–	–	–
Cash profit	–	1,50,000	2,00,000	2,00,000	2,00,000	2,00,000

Cost of equity is 12% and that of debt is 16%, Tax rate is 40%. As per the policy of the company the Debt Equity Ratio is to be maintained at 1 : 1 and discounting factor shall be equal to cost of capital. Is the investment viable ?

END