1418

MBA 1st Semester Examination

Management Science-I (O.S.)

102

Time : 3 Hours   **Max. Marks : 60**

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : (i)   Attempt 5 questions in total, selecting one question from each unit.

(ii) Sub parts in questions carry equal marks.

(iii) Each question is of 12 marks.

UNIT - I

1. What do you understand by quantification of business problems? Discuss scope of quantification and its pros and cons.   **(12)**

2. For what value of x the following function is maximum or minimum,

    $$\frac{x^2 - 7x + 6}{x - 10}$$ **(12)**

UNIT - II

3. Draw the graph of the function:

    $y = x|x|,$

    $-\infty \le x \le \infty$ **(12)**

4. Integrate :

    (i) x^4 (ii) x^{100} (iii) x (iv) $\sqrt[3]{x^4}$ **(12)**

UNIT - III

5. Assume that a factory has two machines. Past records show that machine I produces 30% of the items of output and machine II produces 70% of the items. Further 5% of the items produced by machine I were defective and only 1% produced by machine II were defective. If a defective item is drawn at random, what is the probability that the defective item was produced by machine I or machine II? **(12)**

6. Write a detailed note on 'Geometric Mean' and 'Harmonic Mean'. **(12)**

UNIT - IV

7. Define hypothesis. Describe briefly the procedure to test hypothesis. **(12)**

8. From the following data see whether there is any relationship between sex and preference of colour.

Colour	Males	Females	Total	
Red	10	40	50	
White	70	30	100	
Green	30	20	50	
Total	110	90	200	**(12)**

UNIT - V

9. What are types of patterns/movements of time series? What preliminary adjustments are required before analysing a time series? **(12)**

10. From the following data construct a price index number of the group of four commodities by using Fisher's Ideal Method.

Commodity	Base Year		Current Year		
	Price per unit	Expenditure (Rs.)	Price per unit	Expenditure (Rs.)	
A	2	40	5	75	
B	4	16	8	40	
C	1	10	2	24	
D	5	25	10	60	**(12)**