

[Total No. of Questions - 10] [Total No. of Printed Pages - 3]
(2064)

14859

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 Five 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. "Business problems can be translated into mathematics for solving executive dilemmas." Comment. (12)
2. Find $\frac{dy}{dx}$ of the following functions:
(i) x^4+4x (ii) $3x^5-5x^3+110$ (iii) $-2+415x^5-(7/8)x^8$ (12)

UNIT - II

3. Solve the following:
(a) Given $f(x) = 2x^2 - 3x + 1$; find $f(2)$, $f(0)$, $f(3)$
(b) If $f(x) = x + |x|$, find $f(3)$ and $f(-3)$ and show also they are not equal. (12)

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4. Integrate:

$$(i) \int 2x^4 dx \quad (ii) \int (2x^{-3} + x^2) dx \quad (iii) \int (a+x)^2 dx \quad (12)$$

UNIT - III

5. A firm plans to bid ₹300 per tonne for a contract to supply 1000 tonnes of a metal. It has two competitors A and B and it assumes that the probability that A will bid less than ₹300 per tonne is 0.3 and that B will bid less than ₹300 per tonne is 0.7. If the lowest bidder gets all the business and the firms bid independently, what is the expected value of the control to the firm? (12)
6. Write a detailed note on Mean, Median & Mode. Also discuss the relationship between them. (12)

UNIT - IV

7. What do you understand by statistical estimation? What are the properties of a good estimator? (12)
8. Two managers were asked to rank 7 different types of investment projects. The rank given by them are as follows:

Project	A	B	C	D	E	F	G
Manager I	2	1	4	3	5	7	6
Manager II	1	3	2	4	5	6	7

Calculate spearman's rank correlation coefficient. (12)

UNIT - V

9. "Index numbers are indispensable tools of economic & business analysis." Comment. Also discuss the problems faced while constructing index numbers. (12)

10. Construct index numbers of prime from the following data by applying:

- (i) Laspeyers method
- (ii) Paasche method
- (iii) Bomley's method
- (iv) Fisher's Ideal method

Commodity	2002		2003	
	Price	Quantity	Price	Quantity
A	2	8	4	6
B	5	10	6	5
C	4	14	5	10
D	2	19	2	13

(12)