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OSMS/M-20 13195

BUSINESS STATISTICS

IMS-202

Time : Three Hours] [Maximum Marks : 70

Note : Attempt *Five* questions in all, selecting *one* question from each of the five Units.

Unit I

1. Define Statistics. Discuss the functions and limitations of statistics. **14**

2. Briefly explain the following : **14**

(a) Primary and Secondary data

(b) Classification of data

(c) Frequency distribution.

Unit II

3. The marks at a test by 50 students are given below :

Marks	00-10	10-20	20-30	30-40	40-50	50-60
No. of Students	2	14	18	9	4	3

Calculate the mean, median, mode, standard deviation and coefficient of variation of the distribution of score. **14**

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4. (a) Explain meaning of central tendency, dispersion, skewness and kurtosis.

(b) Calculate first quartile and 8th deciles for the data given in Q. No. 3. **8+6=14**

Unit III

5. Explain the following :

(a) Positive and negative correlation

(b) Linear and non-linear correlation

(c) Simple, multiple and partial correlation

(d) Properties of regression coefficients. **14**

6. Fit least-square lines of Y on X and X on Y to the following data :

X :	8	8	9	10	10
Y :	11	12	10	9	8

Hence obtain the estimated value of Y when X = 9 and the estimated value of X when Y = 13. **14**

Unit IV

7. For the following data, calculate the partial and multiple correlation coefficients :

$r_{12} = 0.45$, $r_{23} = 0.50$, $r_{13} = 0.70$

(the symbols carry their usual meanings) **14**

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8. What is time series ? What are the purposes of time series data ? Explain the components of a time series. **14**

Unit V

9. "Index numbers are statistical devices designed to measure the relative changes in the level of a certain phenomenon in two or more situations." Discuss this statement and point out the important uses of index numbers. Also, point out problems faced while constructing index numbers. **14**

10. Construct the price index number and quantity index number for the following data; using : **14**

(i) Laspeyre's
(ii) Paasche's
(iii) Marshall and Edgeworth's
(iv) Fisher's Ideal Index Formula.

	Base Year		**Current Year**	
Commodities	**Price**	**Quantity**	**Price**	**Quantity**
A	50	10	60	5
B	40	14	50	10
C	20	19	20	13