

Roll No.

12604

**MBA 2 Yr. 1st Semester CBCS 2019-20
New Scheme
Examination – April, 2021**

BUSINESS STATISTICS AND ANALYTICS

Paper : 19IMG21C4

Time : Three hours]

[Maximum Marks : 80

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : The question paper comprises of *two* Section. Section-A is *compulsory* and each part carries *two* marks. Attempt any *four* questions from Section-B selecting *one* question from each Unit. All question carry equal marks.

SECTION – A

1. Conceptualize the following :

- (a) Median
- (b) Kurtosis

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- (c) Partial Correlation
- (d) Regression Lines
- (e) Time Series Analysis
- (f) Non-Sampling Error
- (g) Business Analytics
- (h) Type II Error

SECTION - B

UNIT - I

2. Write note on the following :

- (a) Importance of Dispersion Analysis
- (b) Kurtosis Analysis

3. The data on the profits (in Rs. Lakh) earned by 60 companies is as follows :

Profits	Below 10	10-20	20-30	30-40	40-50	50 and above
No. of Companies	5	12	20	16	5	2

Area	Number of Units			
	A	B	C	D
1	80	100	95	70
2	82	110	90	75
3	88	105	100	82
4	85	115	105	88
5	75	90	80	65

Is there a significant difference in the efficiency of these salesmen ?

Item	2008		2009	
	Price	Quantity	Price	Quantity
A	5	25	6	30
B	3	8	4	10
C	2	10	3	8
D	10	4	3	5

UNIT - IV

8. (a) What do you mean by Sampling ? Discuss different types of sampling techniques with suitable examples.

(b) Discuss Chi-square test.

9. The following figures related to the number of units of a product sold in five different areas by four salesmen

(A, B, C and D) :

(a) Obtain the limits of profits of the central 50 percent companies.

(b) Calculate Bowley's coefficient of Skewness and interpret its value.

UNIT - II

4. Calculate Spearman's coefficient of correlation between marks assigned to ten students by Judge X and Y in a certain competitive test as shown below :

Student	marks by Judge X	Marks by Judge Y
1	52	65
2	53	68
3	42	44
4	60	58
5	45	52
6	45	48

7	37	39
8	38	39
9	26	27
10	26	36

UNIT - III

5. The following data relates to the scores obtained by a salesmen of a company in an intelligence test and their weekly sales (in Rs. 1000 s) :

Salesman Intelligence	A	B	C	D	E	F	G	H	I
Test Score	50	60	50	60	80	50	80	40	70
Weekly Sales	30	60	40	50	60	30	70	50	60

- (a) Obtain the regression equation of sales on intelligence test scores of the salesmen.
- (b) If the intelligence test score of a salesman is 65, what would be his expected weekly sales ?

6. (i) Discuss various components of Time Series.

- (ii) The following Table relates to the tourist arrivals (in millions) during 1994 to 2000 in India :

Year	1994	1995	1996	1997	1998	1999	2000
Tourists Arrivals	18	20	23	25	24	28	30

Fit a straight line trend by the method of least squares and estimate the number of tourists that would arrive in the year 2005 ?

7. Write note on the following :

- (a) What is index number ? What are the problems in the construction of index numbers ?
- (b) Compute Marshall-Edgeworth's Price Index number from the following data :