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Total No. of Questions : 10]  
(2103)

[Total No. of Printed Pages : 8

**BBA (CBCS) RUSA Ist Semester  
Examination**

**3539**

**STATISTICS FOR BUSINESS DECISION**

(Core Course)

Paper : BBA-103

**Time : 3 Hours]**

**[Maximum Marks : 70**

*Note :- Attempt five questions in all. Select one question each from Parts-B, C, D and E. Part-A is compulsory.*

**Part-A**

1. Attempt all the multiple choice questions :

- (i) What is the major attribute of Correlation Analysis ?
- (a) Association among variables
  - (b) Difference among variables
  - (c) Regression among variables
  - (d) Variations among variables

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(ii) Arithmetic mean is 12 and numbers of observations are 20, then sum of all values is :

- (a) 8 (b) 32  
(c) 240 (d) 1667

(iii) In a throw of coin what is the probability of getting head ?

- (a) 1 (b) 2  
(c)  $\frac{1}{2}$  (d) 0

(iv) The number of observations in a particular class is called :

- (a) Width of the class  
(b) Class mark  
(c) Frequency  
(d) None of these

(v) Which one of these statistics is unaffected by outliers ?

- (a) Mean  
(b) Interquartile range  
(c) Standard deviation  
(d) Range

(vi) One use of a regression line is :

- (a) To determine if any x-values are outliers
- (b) To determine if any y-values are outliers
- (c) To determine if a change in x causes a change in y.
- (d) To estimate the change in y for a one-unit change in x.

(vii) Compute  $Q_2$  for following data :

4, 2, 10, 8, 6,

- (a) 8
- (b) 6
- (c) 0.7
- (d) 9

(viii) The standard deviation of a simple of 100 observations equals 64. The variance of the sample equals :

- (a) 8
- (b) 10
- (c) 6,400
- (d) 4,096

(ix) Fisher's index number satisfies :

- (a) Time reversal test
- (b) Factor reversal test
- (c) Both (a) and (b)
- (d) None of these

(x) A process by which we estimate the value of dependent variable on the basis of one or more independent variables is called :

(a) Correlation (b) Regression

(c) Residual (d) Slope  $1\frac{1}{2} \times 10 = 15$

2. Short answer type questions. Attempt any *five* parts.

Each part carries 3 marks :

(i) What is Hypothesis ? Explain its types.

(ii) What do you mean by business statistics ?  
What are its features ?

(iii) Discuss the various applications of statistics in business.

(iv) What is a measure of dispersion ?

(v) Define 'Measurement of trend'.

(vi) What is the formula for the calculation of Formula of interquartile range and quartile deviation ?

(vii) Discuss the various problems in the construction of an Index Numbers.

(viii) Find out mean and median value from the following distribution :

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Wage Rate (₹)	Frequency (F)
0—10	15
10—20	20
20—30	25
30—40	24
40—50	12
50—60	31
60—70	71
70—80	52

$3 \times 5 = 15$   
10 each

**Part-B**

3. What do you mean by 'Central Tendency' ? What are the desirable properties for an average ? Discuss about mean, median and mode.

Or

4. Calculate the standard deviation from the following data :

Marks in Statistics	Number of Students
0—10	5
10—20	7
20—30	14
30—40	12
40—50	9
50—60	6
60—70	2

Part-C

10 each

5. In a poetry competition, the participant were accorded following marks by two different judges, X and Y.

X	Y
15	15
17	12
14	4
13	6
11	7
12	9

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16	3
18	10
10	2
9	5

Calculate the coefficient of Rank Correlation.

*Or*

6. Calculate regression coefficients and obtain the lines of regression for the following data :

X	Y
1	2
2	8
3	10
4	12
5	11
6	13
7	14
8	16
9	15

**Part-D**

10 each

7. What do you understand by analysis of time series ?  
Discuss about its components and significance ?

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Or

8. Calculate Laspeyre's Paasche's and Fisher's (price and quantity indices) for the following data. Also examine which of the above indices satisfies both the time reversal and factor reversal tests :

Commodity	Base Year 2016		Current Year 2021	
	Value (₹)	Quantity (Units)	Value (₹)	Quantity (Units)
A	500	100	900	150
B	320	80	500	100
C	150	60	360	72
D	360	30	297	33

Part-E

10 each

9. What is probability ? Highlight its need and importance in business. Also calculate what is the probability of drawing a king and a queen consecutively from a deck of 52 cards, without replacement ?

Or

10. What is hypothesis testing ? Explain the process of testing hypothesis with the help of any practical example.