

**B.B.A. Part-I (Semester—I) (CBCS) Examination**  
**BUSINESS MATHEMATICS AND STATISTICS**

Time : Three Hours]

[Maximum Marks : 80

**Note :— All sections are compulsory.**

**SECTION—A**

(Choose the Correct Alternative)

1. Statement one : The LCM of 24 and 32 is 108.  
Statement two : The Simple Interest of Rs. 2,000 for 3 years at 10 pcpa is Rs. 6,000.
  - (a) Statement one is correct
  - (b) Statement two is correct
  - (c) Both the statements are correct
  - (d) Both the statements are wrong
2. Statement one : The 25% profit on cost price of 4,000 is Rs. 2,000.  
Statement two : Compound Interest on Rs. 500 at 12% p.a. for 2 years Rs. 500.
  - (a) Statement one is correct
  - (b) Statement two is correct
  - (c) Both the statements are correct
  - (d) Both the statements are wrong
3. Statement one : Index Number is expressed in ratios.  
Statement two : The Number of observations in particular class is Frequency.
  - (a) Statement one is correct
  - (b) Statement two is correct
  - (c) Both the statements are correct
  - (d) Both the statements are wrong
4. Statement one : Statistics is a branch of Applied Mathematics.  
Statement two : Fisher's is an Ideal Index Number.
  - (a) Statement one is correct
  - (b) Statement two is correct
  - (c) Both the statements are correct
  - (d) Both the statements are wrong

5. Statement one : Median is not a measure of Central Tendency.  
Statement two : Mean is not an Average.
- (a) Statement one is correct
  - (b) Statement two is correct
  - (c) Both the statements are correct
  - (d) Both the statements are wrong
6. Statement one : The Arithmetic mean of number 5, 10, 15 is 10.  
Statement two : Mode is the most repeated observations.
- (a) Statement one is correct
  - (b) Statement two is correct
  - (c) Both the statements are correct
  - (d) Both the statements are wrong
7. Statement one : Coefficient of correlation lies between 2 and  $-2$ .  
Statement two : Correlation shows the relationship between two variables.
- (a) Statement one is correct
  - (b) Statement two is correct
  - (c) Both the statements are correct
  - (d) Both the statements are wrong
8. Statement one : Perfect Degree of correlation is denoted by  $+1$ .  
Statement two : No correlation between two variables is denoted by  $-1$ .
- (a) Statement one is correct
  - (b) Statement two is correct
  - (c) Both the statements are correct
  - (d) Both the statements are wrong
9. Statement one : Range is a method of dispersion.  
Statement two : Standard Deviation is not a method of dispersion.
- (a) Statement one is correct
  - (b) Statement two is correct
  - (c) Both the statements are correct
  - (d) Both the statements are wrong

10. Statement one : Third Quartile is denoted by  $Q_1$ .

Statement two : If  $L$  is 5 and  $H$  is 30 then range is 25.

- (a) Statement one is correct
- (b) Statement two is correct
- (c) Both the statements are correct
- (d) Both the statements are wrong

10×2=20

### SECTION—B

1. The combine cost of a cycle and watch is Rs. 11,700. If their cost are in the ratio of 7 : 5. Find their cost.

**OR**

The HCF of two number is 12 and their LCM is 72. If one of the number is 36 find out other number.

2. Construct the cost of Living Index Number :

Group	Index No.	Weight
Food	550	46
Clothing	215	10
Fuel and lighting	220	7
House Rent	150	12
Miscellaneous	275	25

**OR**

Explain the function of statistics.

3. Find out mean from the following series :

Size	:	8	9	10	11	12	13	14
Frequency	:	5	10	7	12	18	6	5

**OR**

Find out the Median :

Marks 20, 24, 28, 34, 36, 40, 42, 60.

4. Find out probable Error :

$$n = 64 \quad r = 0.6$$

**OR**

Find out coefficient of correlation :

$$\begin{aligned} \Sigma xy &= 216 & n &= 10 \\ \text{S.D. } x &= 4.71 & \text{S.D. } y &= 6.03 \end{aligned}$$

5. Find out the coefficient of skewness :

$$a = 123.14$$

$$Z = 123$$

$$S.D. = 3.60$$

**OR**

Find out mean deviation with the help of mode :

Values : 30, 37, 40, 42, 40, 47, 50, 37, 40, 56

$$5 \times 4 = 20$$

### SECTION—C

1. The simple Interest on a certain sum at the same rate for 2 years is Rs. 1,400. Find the sum and rate of Interest.

**OR**

A, B, and C are Cricket players. Their ratio is A and B 5 : 3 & B & C is 4 : 5 their total runs were 235.

Find out the runs of each players.

2. Find out Index Number by Fisher's formula :

Item	2021		2022	
	Price	Q + Y	Price	Q + Y
X	2	2	1	5
Y	3	4	4	5
Z	5	3	6	2

**OR**

Define statistics and explain limitation of statistics.

3. Find out Median :

Profit Below : 20, 30, 40, 50, 60, 70, 80, 90

Book Depots : 5, 15, 29, 50, 71, 86, 97, 100

**OR**

100 students gave donations as follows in a function of school. Find out average donation per student :

10 students donate Rs. 5 each

15 students donate Rs. 4 each

24 students donate Rs. 3 each

30 students donate Rs. 2 each

21 students donate Re. 1 each

4. Find out the Karl Pearson's coefficient of correlation from the following data :

X :	6	12	18	24	30	36
Y :	60	50	40	30	20	10

**OR**

From the following data find out 'r' and P.E.

- (i) No. of Pairs of observations = 10
  - (ii) Total of the deviations of x series = – 170
  - (iii) Total of the deviations of y series = – 120
  - (iv) Total of the square of deviation of x – series = 8286
  - (v) Total of the square of deviation of y – series = 2264
  - (vi) Total of the product of deviation of x and y series = 30440
5. Find out Quartile deviation and coefficient of Quartile Deviation from the following data relating to the marks of seven students.
- Marks : 50, 70, 80, 60, 65, 40, 90

**OR**

Find out which Company's shares are more uniform :

	Company	
	A	B
Mean	1106.67	1050
S.D.	184.4	124.88

5×8=40