

(i) Printed Pages: 3

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(ii) Questions : 14

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**Bachelor of Business Administration 1<sup>st</sup> Semester**

(1129)

**BUSINESS STATISTICS**

**Paper—BBAS102**

**Time Allowed : Three Hours]**

**[Maximum Marks : 80**

**Note :—** Attempt *four* questions from Section-A and *two* questions each from Section-B and Section-C. Use of non-programmable calculator is allowed.

**SECTION—A (4×5)**

1. Distinguish between descriptive statistics and inferential statistics.
2. What is factor reversal test ?
3. A car travels with a speed of 40 miles per hour for the first half of the way. Then, the car travels with a speed of 60 miles per hour for the second half of the way. What is the average speed ?
4. For a sample of cities, the coefficient of rank correlation between increase in people in BPL category and increase in general population is 0.50. If the sum of squares of the rank differences is 82.50, find the number of cities.

5. A pack contains 4 blue, 2 red and 3 black pens. If a pen is drawn at random from the pack, replaced and the process repeated 2 more times, what is the probability of drawing 2 blue pens and 1 black pen ?
6. A coin is tossed 10 times. Assuming the coin to be unbiased, what is the probability of getting at least 4 heads ?

### SECTION—B (2×15)

7. Define statistics. Explain its types, and importance to trade, commerce and business. What are the major limitations of statistics ?
8. What are the properties of a good estimator ? Explain how these properties are essential for estimating the population characteristics of interest.
9. In a distribution of 10 observations, the value of mean and variance are given as 20 and 64. By mistake, two values are taken as 2 and 6 instead of 4 and 8. Find out the value of correct mean and variance.
10. Find the two regression equations from the following data :

X	2	4	5	5	8	10
Y	6	7	9	10	12	12

Also estimate Y when X is 13 and estimate X when Y is 15.

### SECTION—C (2×15)

11. Define independent and mutually exclusive events. Can two events be mutually exclusive and independent simultaneously ? Support your answer with an example.

12. Define random variable. How do you distinguish between discrete and continuous random variables ? Illustrate your answer with suitable examples.
13. Fit a linear trend curve by the least-squares method to the following data :

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Output (kg.)	3	5	6	6	8	10	11	12	13	15

14. The following table contains information from the raw material purchase records of a small factory for the year 2016-17 and 2017-18 :

Commodity	2016-17		2017-18	
	Price (Rs./unit)	Total Value (Rs.)	Price (Rs./unit)	Total Value (Rs.)
A	5	50	6	72
B	7	84	10	80
C	10	80	12	96
D	4	20	5	30
E	8	56	8	64

Calculate Fisher's ideal index number. Prove that it satisfies time reversal test.