(i) Printed Pages: 7   Roll No. ....

(ii) Questions   : 14   Sub. Code : | 0 | 8 | 6 | 8 |

Exam. Code : | 0 | 0 | 2 | 2 |

Bachelor of Business Administration 2nd Semester

(2042)

BUSINESS STATISTICS

Paper—BBA-122

Time Allowed : Three Hours]   [Maximum Marks : 80

Note :— (1) Attempt any *four* questions from Section A.

(2) Attempt *two* questions each from Section B and Section C respectively.

SECTION—A

1. Discuss the important functions of Statistics.   5

2. Calculate the three years monthly moving averages from the following data :

January	57
February	65
March	63
April	72
May	69
June	78
July	82
August	81
September	90
October	92
November	95
December	97

5

3. Seven students obtained the following ranks in Maths and Statistics. Find their rank correlation. 5

   Rank in Maths : 7 1 4 6 5 3 2

   Rank in Statistics : 5 1 2 3.5 3.5 7 6

4. Define geometric mean. What are its merits and demerits ? 5

5. Compute coefficient of Quartile Deviation from the following data :

   Students No. : 4 7 15 8 7 2

   Marks : 10 20 30 40 50 80 5

6. Calculate Karl Pearson's coefficient of Skewness :

Measure	Place A	Place B
Mean	256.5	240.8
Median	201.1	201.6
Standard Deviation	215.0	181.0

   5

   ## SECTION—B

7. (a) State the various uses of statistics in business.

   (b) From the data given below, find the mean, median, mode.

Marks	No. of Candidates
1—5	7
6—10	10
11—15	16

Mean	No. of Candidates
16—20	30
21—25	24
26—30	17
31—35	10
36—40	5
41—45	1

7+8=15

8. Find Karl Pearson's coefficient of correlation :

Age of Husband (in years)	Age of Wife (in years)
20	18
22	20
23	22
25	24
25	21
28	26
29	26
30	25
30	27
34	29

15

9. From the following information :

	Advertisement Expenditure (Rs. Crore)	Sales (in Rs. Crore)
Mean	20	100
Standard Deviation	5	12
Correlation Coefficient	0.8	

(a) Calculate two regression lines.

(b) Find the likely sales when advertisement expenditure is Rs. 25 crores.   12+3=15

10. (a) The arithmetic mean and standard deviation of a series of 20 items were calculated by a student as 20 cm and 5 cm respectively. But while calculating an item 13 was misread as 30. Find the correct arithmetic mean and standard deviation.

(b) Find the missing frequency from the following data when :

Marks	No. of Students
0—10	5
10—20	15
20—30	20
30—40	—
40—50	20
50—60	10

Arithmetic mean given is 34.   7+8=15

SECTION—C

11. (a) Explain and illustrate the difference between fixed base and chain base index numbers.

    (b) From the following data, construct a cost of living index number by using family budget method for 2016 with 2006 as base year :

Commodity	P	Q	R	S	T	U
Quantity in 2006 (in units)	50	25	10	20	30	40
Price in 2006 (per unit)	10	5	8	7	9	6
Price in 2016 (per unit)	6	4	3	8	10	12

7+8=15

12. (a) Highlight the importance of Time Series analysis for a business.

    (b) Fit a straight line trend by the method of least squares and also calculate the trend values from the following data :

Year	Production
2010	12
2011	10

Year	Production	
2012	14	
2013	11	
2014	13	
2015	15	
2016	16	5+10=15

13. (a) State and explain the uses of index numbers.

(b) Calculate Fisher's index from the following data and prove that it satisfies both the time reversal and factor reversal tests :

Commodity	2015		2016	
	Price	Expenditure	Price	Expenditure
A	8	80	10	120
B	10	120	12	96
C	5	40	5	50
D	4	56	3	69
E	20	100	25	150

5+10=15

14. Calculate Bowley's coefficient of skewness when :

Age (in years)	No. of Persons
20—25	50
25—30	70
30—35	80
35—40	180
40—45	150
45—50	120
50—55	70
55—60	50

15