(i) **Printed Pages: 4** **Roll No. .....**

(ii) **Questions : 14** **Sub. Code : 0 8 6 2**

Exam. Code : 0 0 2 1

Bachelor of Business Administration 1st Semester

1128

BUSINESS STATISTICS

Paper : BBAS-102

Time Allowed : Three Hours] **[Maximum Marks : 80**

Note :— (1) Attempt any **FOUR** questions from Section-A. Each question carries **5** marks.

(2) Attempt any **TWO** questions each from Sections B and C. Each question carries **15** marks.

SECTION—A

1. Discuss importance of time series.
2. The rank correlation coefficient between the marks obtained by 10 students in mathematics and economics are found to be 0.5. Find the sum of squares of difference of ranks.
3. A die is thrown. Let E be the event 'the number appearing is a multiple of 3' and F be the event 'the number appearing is even'. Find whether E and F are independent.
4. What is the difference between Spearman's and Karl Pearson's coefficient of correlation ?
5. The mean and variance of 8 observations are 9 and 9.25 respectively. If the size of six observations are 6, 7, 10, 12, 12 and 13, find the remaining 2 observations.

6. From the following Fixed Base Index, construct Chain Base Index :

Year	F.B.I.
1981	188
1982	196
1983	204
1984	190
1985	196

SECTION—B

7. A computer while calculating correlation coefficient between two variables X and Y from 25 pairs of observations obtained the following results :

$n = 25$, $\Sigma X = 125$, $\Sigma Y = 100$, $\Sigma XY = 508$, $\Sigma X^2 = 650$, $\Sigma Y^2 = 460$.

It was however discovered at the time of checking that 2 pairs of observations were not correctly copied. They were taken as (6, 14) and (8, 6) while the correct values were (8, 12) and (6, 8). Prove that the correct values of correlation coefficient should be 2/3.

8. For a group of 500 students data relating to marks in Statistics and Business Administration are given below :

	Statistics	Business Administration
Mean	72	60
Standard Deviation	16	12

Sum of product of deviation about actual mean = 61440.

Find :

(i) Coefficient of correlation

(ii) Two regression coefficients

(iii) Two regression equations

(iv) Estimated marks in Business Administration who obtained 75 marks in Statistics.

9. From the data given below state which group is variable more A and B :

Marks	Group A	Group B
10–20	9	10
20–30	17	20
30–40	32	30
40–50	33	25
50–60	40	43
60–70	10	15
70–80	9	7

10. Define statistics and give its main limitations. How far is it correct to say that "planning without statistics is like a ship without radar and compass" ?

SECTION—C

11. Calculate price index number of the year 2008 with 2000 as the base year from data given below using :

(i) Laspeyre's

(ii) Paasche's and

(iii) Fisher's formula.

		2000		2008	
Item	**Unit**	**Price**	**Value**	**Quantity**	**Value**
A	Kg	10	1500	160	1760
B	Kg	12	1080	100	1300
C	Metre	15	900	60	960
D	Pockets	9	450	40	480

12. Compute the trend values on the method of least square from the data given below :

Year	**No. of Sheep (in lakhs)**
1992	56
1993	55
1994	51
1995	47
1996	42
1997	38
1998	33
1999	32

13. (a) Four cards drawn from a pack of 52 playing cards. Find the probability of :

    (i) All are diamonds

    (ii) There is one card of each suit

    (iii) There are two spades and two hearts.

    (b) Pair of dice is thrown 4 times. If a doublet is considered a success, find the probability of 2 successes.

14. Explain clearly the meaning of Time Series Analysis. Indicate the importance of such analysis in business.