(6)

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

(ii) **Questions : 14** **Sub. Code :** 0 8 4 3

Exam. Code : 0 0 1 3

BBA Ist Semester

1125

BUSINESS STATISTICS

Paper–BBAS102

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

Note : (i) Attempt any **four** questions from Section A. Each question carries 5 marks.

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

SECTION–A

1. Write properties of arithmetic mean. 5

2. The rank correlation coefficient between marks obtained by 10 students in Mathematics and Economics was found to be 0.5. Find the sum of squares of differences of ranks. 5

3. Two samples of sizes 100 and 150 respectively have means 50 and 60 and standard deviations 5 and 6. Find the mean and standard deviation of combined sample of size 250. 5

4. A person is known to hit the target in 3 out of 4 shots. Whereas another person is known to hit the target in 2 out of 3 shots. Find the probability of the target being hit at all when they both try. 5

5. The probability that an evening student will graduate is 0.8. Determine the probability that out of 5 students :

(i) None

(ii) One

(iii) At least one

will graduate. 5

6. What is the difference between correlation and regression ? 5

SECTION–B

7. Define Statistics. What is the importance and limitations of Statistics ? 3,6,6

8. From the prices of shares of X and Y given below, state which share is more stable in value ?

X	41	44	43	48	45	46	49	50	42	40
Y	91	93	96	92	90	97	99	94	98	95

7,7,1

9. Calculate correlation coefficient from the following results :

$N = 10$, $\Sigma X = 140$, $\Sigma Y = 150$, $\Sigma (X - 10)^2 = 180$, $\Sigma (Y - 15)^2 = 215$, $\Sigma (X - 10)(Y - 15) = 60$. 15

10. You are given the following information :

	X	Y
Arithmetic Mean	5	12
Standard Deviation	2.6	3..6
Correlation Coefficient	r = 0.7	

(i) Obtain two regression equations

(ii) Estimate Y when X = 9

(iii) Estimate X when Y = 12. 12,1½,1½

SECTION–C

11. Assume mean height of soldiers to be 68.22 inches with a variance of 10.8 inches, how many soldiers in a regiment of 1000 would you expect to be over six feet tall ? 15

12. Calculate Fisher's Ideal Index from the following data and show that it satisfies both the time reversal and factor reversal tests :

Commodity	1983		1984	
	Price	Expenditure	Price	Expenditure
A	8	80	10	120
B	10	120	12	96
C	5	40	5	50
D	4	56	3	60
E	20	100	25	150

5,5,5

13. Fit a straight line trend by the method of least squares to the following data and estimate the profits for the year 1970 :

Year	1961	1962	1963	1964	1965	1966	1967	1968
Profit (Rs. crore)	80	90	92	83	94	99	92	104

15

14. Define the following with examples : 15

(i) Exhaustive Events

(ii) Mutually Exclusive Events

(iii) Independent Events

(iv) Dependent Events

(v) Equally-likely Events.