

(i) Printed Pages : 4

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(ii) Questions : 14 Sub. Code : 

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Exam. Code : 

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**Bachelor of Business Administration (FYUP) 3<sup>rd</sup> Semester  
(2125)**

**BUSINESS STATISTICS**

**Paper : NBBA 303 [Common with BBA Business Innovation  
& Entrepreneurship (FYUP) 3<sup>rd</sup> Sem. & BBA Banking  
Financial Services and Insurance (FYUP) 3<sup>rd</sup> Sem.]**

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

**Note :—**Attempt **FOUR** short answer type questions from Section-A. Each question carries **5** marks. Attempt **TWO** questions each from Sections B and C respectively. Each question carries **15** marks.

**SECTION—A**

1. Distinguish between primary data and secondary data.
2. What are the properties of regression coefficient?
3. Draw less than and more than ogives from the data given below:

Marks	No. of Students
0-5	4
5-10	6
10-15	10
15-20	10
20-25	25

Marks	No. of Students
25-30	22
30-35	18
35-40	5

4. If the covariance between X and Y variables is 10 and the variance of X and Y are respectively 16 and 9, find the coefficient of correlation.
5. Compute 3 yearly moving averages for the following data :

Year	Actual Value
1981	7
1982	8
1983	9
1984	11
1985	10
1986	12
1987	8
1988	6
1989	5
1990	10

6. The coefficient of variation of a series is 58%. The standard deviation is 21.2. What is the arithmetic mean?

### SECTION—B

7. "Statistics are numerical statements of facts in any department of inquiry and placed in relation to each other." Comment and discuss the characteristics of Statistics.
8. The median and mode of the following wage distribution of 230 workers are known to be Rs. 33.5 and Rs. 34 respectively. Three frequency values from the table however are missing.

Find the missing values:

Wages in Rs.	No. of Workers
0-10	4
10-20	16
20-30	-
30-40	-
40-50	-
50-60	6
60-70	4
<b>Total</b>	230

9. The mean and standard deviation of 200 items are found to be 60 and 20 respectively. If at the time of calculations, two items were wrongly taken as 3 and 67 instead of 13 and 17, find the correct mean and standard deviation. What is the correct coefficient of variation?
10. Find the correlation coefficient between age and playing habits of the following students using Karl Pearson's coefficient of correlation method :

Age	15	16	17	18	19	20
No. of students	250	200	150	120	100	80
Regular Players	200	150	90	48	30	12

### SECTION—C

11. Define Index Numbers. Discuss the problems in the construction of Index Numbers. Discuss their uses.

12. Regression equations are :

$$8x - 10y + 66 = 0$$

$$40x - 18y = 214$$

$$\text{Variance of } x = 9$$

Calculate :

- The mean values of  $x$  and  $y$ .
  - Standard deviation of  $x$  and  $y$ .
  - Coefficient of correlation between  $x$  and  $y$ .
13. Calculate Fisher's Ideal Index from the following data and show that it satisfies both the time reversal and factor reversal tests:

Commodity	1980		1990	
	Price	Total Expenditure	Price	Total Expenditure
A	8	100	10	90
B	10	60	11	66
C	5	100	5	100
D	3	30	2	24
E	2	8	4	20

14. Below are given the annual production (in thousand tons) of a fertilizer factory:

Year	1977	1978	1979	1980	1981	1982	1983
Production	70	75	90	91	95	98	100

- Fit a straight line trend by the method of least squares and tabulate the trend values.
- Convert your annual trend equation into a monthly and quarterly trend equation.
- What is the rate of growth of production per month?