Roll No. | | | | | | | | | | | | **Total No. of Pages : 02**

Total No. of Questions : 07

B.Com. (2011 & Onward) (Sem.–2)

BUSINESS STATISTICS

Subject Code : BCOP-204

Paper ID : [B1120]

Time : 3 Hrs. **Max. Marks : 60**

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.**

SECTION-A

1. Write briefly :

a) Using the values 2, 4, 8 verify that A.M. > H.M.

b) Find out median, when $\overline{X}$ = 20, Mode = 21.

c) From the following data calculate, Quartile deviation X = 4, 9, 14, 19, 24, 29, 34, 39, 44, 49, 54.

d) Find the coefficient of skewness from following information, Difference of two quartiles = 8, Mode = 11, Mean = 8, Sum of two quartiles = 22

e) Two Judges in a beauty contest ranked the entries as follows :

X	7	6	3	1	2	5	4
Y	5	4	2	3	6	7	1

What degree of agreement is there between the Judgment of the Judges?

f) From the following data, calculate the no. of variables $\sum xy$ = 135, σ_x = 2, σ_y = 3, r = 0.9.

g) Calculate variance of Y for following data σ_x = 3, regression coefficient of X on Y 0.6 and r = 0.8.

h) Given $\overline{X}$ = 20, $\overline{Y}$ = 25, b_{yx} = (–1.5) find regression equation of Y on X.

i) For two variables X, Y $r = 0.6$, CoV (X, Y) = 18 variance of X is 25. Find variance of Y.

j) Calculate mean, given that Mode = 29, variance = 100, Karl-Pearson's coefficient of skewness = –0.9.

SECTION-B

2. Give the definition of statistics and discuss its scope and limitations.

3. Form the following data calculate the modal value.

Weight	10–20	20–30	30–40	40–50	50–60	60–70	70–80	80–90
No. of persons	4	6	20	32	33	17	8	2

4. (a) Calculate S.D. from the following data :

Classes	10–20	20–30	30–40	40–50	50–60	60–70
f	2	4	8	10	12	4

(b) Calculate Bowley's coefficient of skewness :

Marks	5	15	25	35	45	55
No. of students	10	20	30	50	40	30

5. (a) Calculate Karl Pearsons coefficient of correlation from the following data :

X	20	24	22	26	24	28	18	24	28	26
Y	14	18	24	18	26	16	20	24	14	26

(b) Calculate *rk* for the following data :

X	75	73	72	72	63	62	55	50
Y	10	11	13	13	13	20	16	28

6. Two lines of regression are X + 2Y = 5 and 2X + 3Y = 8 and variance X is 12. Calculate the value of $\overline{X}$, $\overline{Y}$, variance of Y and r.

7. (a) Compute the trend values by method of least squares from following data :

Year	1991	1992	1993	1994	1995	1996	1997
Production	80	90	92	83	94	99	92

(b) Calculate 3 yearly and 5 yearly moving averages for the following series :

Year	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Sale	30	36	45	54	75	66	60	78	90	120	114