

2025

BUSINESS ADMINISTRATION — HONOURS

Paper : BBAA-201-CC2

(Statistics for Business Decisions)

Full Marks : 75

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

Group - A

1. Answer *any ten* questions : 2×10
- (a) Calculate median of the following : 2, 8, 4, 3, 10, 14, 19.
 - (b) If the geometric mean of a, 4, 8 be 6, find the value of a.
 - (c) Find the standard deviation of the numbers 1, 2, 3, 4, 5, 6, 7, 8, 9.
 - (d) Find the mode of a distribution where mean is 15.2 and median is 14.5.
 - (e) The second and third central moments of four numbers are 5 and 0 respectively. Find the coefficient of skewness.
 - (f) Define Scatter Diagram.
 - (g) If $x = -0.2y + 4.2$, $y = -0.8x + 8.4$ be the regression lines of x on y and y on x respectively. Find correlation coefficient of x and y.
 - (h) If $r = 0.6$, $\text{cov}(x,y) = 12$, $\sigma_y = 5$, then find the value of σ_x .
 - (i) In a frequency distribution, the first four central moments are 0.0, 2.5, 0.7, 18.75 respectively. Find the kurtosis.
 - (j) If $\bar{x} = 3$, $\bar{y} = 4$ and $b_{xy} = 0.23$, $b_{yx} = 0.45$, then find the regression lines.
 - (k) If S.D of x is 2 and $y = 2x + 3$ then find the variance of y.
 - (l) Find the C.V. of a distribution where mean is 40 and variance is 4.
 - (m) If the first moment of a distribution is 2 about the value 2, find the mean.
 - (n) In a distribution, the difference between first and third quartiles is 2.03 and their sum is 72.67; find the skewness if the median is 36.18.
 - (o) Find rank correlation coefficient if $N = 10$ and $\sum D^2 = 30$.

Please Turn Over

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Group - B

2. Answer *any five* questions : 5×5

(a) The arithmetic mean of 54 observations is 45.6; later on it was reported that two of the observations 52 and 46 copied as 23 and 39. Find the actual arithmetic mean.

(b) Calculate quartile deviation from the following distribution :

Marks	30-39	40-49	50-59	60-69	70-79	80-89	90-99
No. of students	2	3	11	20	32	25	7

(c) The mean and variance calculated from a group of 80 observations are 63.2 and 25.93 respectively. If 60 of these observations have mean 64.8 and S.D. 4, find the mean and S.D of the remaining 20 observations.

(d) Compute the coefficient of skewness from the following data :

Age	10	20	30	40	50	60
No. of Persons	15	32	51	78	97	109

(e) Find the correlation coefficient from the following data :

X	6	2	10	4	8
Y	9	11	5	8	7

(f) Calculate arithmetic mean and the standard deviation of the following : 2, 4, 6, 8, 10.

(g) Calculate mode for the following data :

Class boundaries	Frequency
50-60	14
60-70	23
70-80	27
80-90	21
90-100	15

(h) The coefficient of rank correlation between the marks in Statistics and Economics obtained by a certain group of students is 0.8. If the sum of the squares of the differences in ranks is given to be 33, find the number of the students in the group.

Group - C

3. Answer *any three* questions : 10×3

(a) (i) Mode of the following frequency distribution is 24 and total frequency is 100. Find the missing values *a* and *b*.

Marks	0-10	10-20	20-30	30-40	40-50
No. of students	14	<i>a</i>	27	<i>b</i>	15

(3)

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- (ii) Find the mean and mean deviation about mean of the following distribution.

Weight (lbs.)	20-29	30-39	40-49	50-59	60-69	70-79
No. of students	5	11	18	22	16	8

4+6

- (b) (i) Fit a Parabolic curve from the following data by the method of least square.

year	2	5	8	9	10
y	3	2	3	6	11

- (ii) The net profit of a company for 11 successive years are given below :

Year :	1994	1995	1996	1997	1998	1999	2000	2001	2002
Profit (in Cr.) :	6.4	4.3	4.3	3.4	4.4	5.4	3.4	2.4	1.4

Find the five year moving average.

5+5

- (c) (i) Draw the Ogive from the following distribution of marks in Statistics at an examination :

Marks	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89
Frequency	8	14	22	29	14	7	4	2

- (ii) Calculate the rank correlation coefficient of the following data :

Series A	29	32	45	67	56	36	45
Series B	56	40	52	68	40	72	40

5+5

- (d) For the variables x and y , the equation of the regression lines are $60x - 27y = 321$ and $12x - 15y + 99 = 0$

(i) Identify the regression line x on y

(ii) Find correlation coefficient

(iii) Find \bar{x} , \bar{y}

(iv) Find σ_y when variance of x is 36

(v) Estimate the value of y when $x = 3$.

2+2+2+2+2

- (e) The runs of two batsman Sachin (A) and Sourav (B) scored in 8 consecutive innings are as follows :

A	32	28	47	63	71	39	60	96
B	19	31	48	53	90	67	62	40

Find C.V. of A, C.V. of B. Also find which of the batsman is more consistent in scoring.

4+4+2

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