

2026

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) Distinguish between an attribute and variable.
- (b) If $y = -3x - 5$ and the mean deviation of x is 4, then find the mean deviation of y .
- (c) The mode and mean of an unsymmetrical distribution are respectively 12 and 18. Find the median of the distribution.
- (d) Find the standard deviation of the following data : 4, 8, 10, 12, 16.
- (e) Define a discrete variable and a continuous variable. Give one example of each case.
- (f) Distinguish between seasonal variation and cyclical fluctua of a time series.
- (g) Explain what you mean by trend of a time series.
- (h) If $r = 0.4$, $\text{cov}(x, y) = 10$ and s.d. of $y = 5$, find s.d. of x .
- (i) If $b_{yx} = \frac{1}{3}$ and $b_{xy} = \frac{2}{5}$, what is $V(x) : V(y)$?
- (j) If the A.M. and G.M. of two observations be 5 and 4 respectively, find the observations.
- (k) If $\bar{x} = 6$ and $\bar{y} = 7$, $b_{yx} = 0.45$ and $b_{xy} = 0.65$, then find the regression equations.
- (l) Define secondary data. Give example.
- (m) The lower and the upper quartiles of a distribution are 14.6 and 25.2 respectively and the coefficient of skewness is 0.5. Find the median of the distribution.
- (n) Find the Kurtosis if second central moment is 16 and fourth central moment is 162.
- (o) Mention any two uses of correlation coefficient.
- (p) Define Pie Chart with a suitable diagram.

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Group - B

2. Answer *any five* questions :

5×5

- (a) Find the unknown frequencies if the median of the distribution is 46.

Height (inches)	10 – 20	20 – 30	30 – 40	40 – 50	50 – 60	60 – 70	70 – 80	Total
No. of Students	12	30	–	65	–	25	18	229

- (b) Determine trend by 4-yearly moving average method of number of students studying in a college shown below :

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
No. of Students	342	327	367	402	412	415	422	438	405	441

- (c) Calculate the standard deviation for the following distribution :

Weekly Wage (₹)	50 – 59	60 – 69	70 – 79	80 – 89	90 – 99	100 – 109	110 – 119
No. of Employees	18	27	31	49	38	25	12

- (d) The following table shows the value of x and y , obtain the rank correlation coefficient of the following data :

x :	68	64	75	50	74	80	70	40	55	60
y :	62	58	68	45	81	60	65	48	50	70

- (e) Find the mean, mode and skewness for the following table :

x :	0–15	15–30	30–45	45–60	60–75	75–90
y :	18	12	17	24	19	10

- (f) Given two regression equations as $40x - 18y = 214$ and $8x - 10y + 66 = 0$. Identify which one will be the regression equation of x on y . Hence or otherwise compute correlation coefficient.

- (g) Draw the ogive of the following frequency distribution of heights of 70 persons :

Height (cm)	126 – 135	136 – 145	146 – 155	156 – 165	166 – 175	176 – 185
Frequency	7	10	14	23	12	4

- (h) Marks obtained by 50 students of a class are :

32	45	20	39	52	15	55	30	18	72	10	45	34	50
28	42	71	17	40	35	12	39	44	58	16	21	61	39
21	10	48	63	25	15	51	68	47	15	10	59	34	55
28	14	31	47	19	40	49	58						

Construct a frequency distribution table with class interval of 10 marks.

Group - CAnswer *any three* questions.

3. (a) Two samples of sizes 60 and 90 have 52 and 48 as the respective arithmetic means 9 and 12 as the respective standard deviations. Find the arithmetic mean and s.d. of the combined sample of size 150.
- (b) The mean of 5 observations is 4.4 and the variance is 8.24. If three of five observations are 1, 2 and 6, find the other two. 5+5

4. (a) Calculate the quartiles from the following data :
- | | | | | | | |
|-------|-----|------|-------|-------|-------|-------|
| x : | 4-8 | 8-12 | 12-16 | 16-20 | 20-24 | 24-28 |
| y : | 5 | 8 | 18 | 25 | 14 | 10 |

- (b) Fit a straight line trend to the given time series data and estimate the value for the year 2026 :

Year	:	2018	2019	2020	2021	2022	2023	2024	
Average Production per month ('000 tons)	:	20	22	21	24	25	23	28	5+5

5. Compute an appropriate measure of skewness from the following data : 10

% of Marks :	20-30	30-40	40-50	50-60	60-70	70-80	80-90
No. of Students :	45	40	24	12	9	3	2

6. (a) Calculate the correlation coefficient of the following data :

x :	63	60	67	61	69	70
y :	61	65	64	63	68	63

- (b) The scores of two batsman, A and B in ten consecutive innings are as under :

A :	70	34	46	58	62	39	11	80	20	50
B :	48	52	66	44	32	58	80	42	68	40

Which player is more consistent in scoring?

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7. (a) For the variables x and y , the equation of regression lines are

$$4x - 5y + 33 = 0 \text{ and } 20x - 9y = 107.$$

(i) Find correlation coefficient.

(ii) Find $\bar{x}$ and $\bar{y}$.

(iii) Find s.d. of y when variance of x is 9.

(b) Find the mean deviation about mean and its coefficients from the following data :

Water Level (cm)	:	30 – 34	35 – 39	40 – 44	45 – 49	50 – 54
No. of days	:	5	11	26	10	8

(2+2+3)+3