

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**

2×10

1. Answer *any ten* questions :

- (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 and 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? 10

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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