

Roll No:

Date:

St. Clare College

Autonomous, Bengaluru

UG END SEMESTER EXAMINATION- MAY 2025

B.COM - II SEMESTER

BC 2424: BUSINESS DATA ANALYSIS

TIME: 3 hours

12.

MAX. MARKS: 80

This paper contains THREE printed pages and FOUR parts

Instructions:

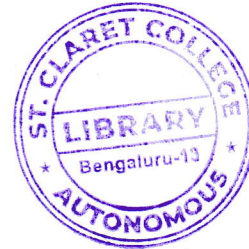
1. Verify and ensure that the question paper is completely printed.
2. Any discrepancies or questions about the exam paper must be reported to the COE within 1 hour after the examination.
3. Students must check the course title and course code before answering the questions.

PART-A

Answer ALL questions. Each answer carries ONE mark.

[10 x 1 = 10]

1. Which of the following is not a type of data classification?
a) Quantitative Classification
b) Geographical Classification
c) Chronological Classification
d) Tabular Classification
2. If a survey records the following number of students in different sections of a school: 40, 55, 65, 50, 60, what is the total frequency?
a) 270 b) 250 c) 280 d) 260
3. A pie chart represents data where the total frequency is 400 students. If 80 students prefer science, what is the central angle for the science category?
a) 36° b) 60° c) 72° d) 90°
4. Given the regression equation $Y = 5 + 2X$, what is the predicted value of Y when $X = 3$?
a) 8 b) 10 c) 9 d) 11
5. The mean, median, and mode are measures of:
a) Dispersion b) Central Tendency c) Correlation d) Regression
6. Which of the following is NOT a component of time series analysis?
a) Regression b) Seasonal Variation c) Trend d) Cyclical Variation
7. What is the range of Pearson's correlation coefficient r ?
a) -2 to +2 b) 0 to 1 c) -1 to +1 d) $-\infty$ to $+\infty$



8. If the regression coefficients $b_{xy}=0.7$, $b_{yx}=0.5$, what is the value of the correlation coefficient r ?
 a) 0.5 b) 0.7 c) 0.6 d) 0.9
9. If the probability of an event occurring is 0.7, what is the probability of it not occurring?
 a) 0.3 b) 0.5 c) 0.7 d) 1.3
10. Two events are said to be mutually exclusive if:
 a) They can occur together
 b) They cannot occur together
 c) One event depends on the other
 d) They have equal probabilities

PART-B

Answer any **THREE** questions. Each answer carries **EIGHT** marks

[3 x 8 = 24]

11. Draw a histogram from the following data and locate the mode graphically.

Size	10-20	20-30	30-40	40-50	50-60
Frequency	20	60	100	150	75

12. Find standard deviation for the data given below.

Age in Years	20-30	30-40	40-50	50-60	60-70	70-80	80-90
No. of Members	5	12	33	20	10	8	3

13. Calculate the rank correlation coefficient from the following data.

Judge A	60	34	40	50	45	41	22	43	42
Judge B	73	32	34	40	45	33	12	30	36

14. Fit a straight-line trend for the actual production and the given trend values on a graph.

Year	1999	2000	2001	2002	2003	2004	2005
Production (in '000 tons)	80	90	92	83	94	99	92
Trend Values (in '000 tons)	84	86	88	90	92	94	96

15. Find the probability of getting 3 white balls in a draw from a basket which has 5 white and 4 black balls?

PART – C

Answer any **THREE** questions. Each answer carries **TWELVE** marks.

[3 x 12 = 36]

16. Calculate Mean, Median and Mode from the data given below.

Mid Value	115	125	135	145	155	165	175	185	195
Frequency	6	25	48	72	116	60	38	22	3

17. Find Karl Pearson's coefficient of correlation and probable error from the marks scored by 10 students in two subjects in their mid-semester examination.

Marks in Banking	45	70	65	30	90	40	50	75	85	60
Marks in HCM	35	90	70	40	95	40	60	80	80	50

18. Following data relate to years of service of seven employees and their income per month. Find two regression equations and estimate the income of a person with 52 years of service.

Years of Service	11	7	9	5	8	6	10
Income (in Rs. '000)	7	5	3	2	6	4	8

19. Calculate the trend values by applying least square method.

Year	2015	2016	2017	2018	2019	2020	2021
Sales (in Cr.)	20	23	22	25	26	29	30

Estimate the likely sales for the year 2023 and 2025.

20. A tin contains 50 tokens numbered from 1 to 50. One token is drawn at random. Find the probability that the number on the token drawn will be a multiple of: i) 3 or 9 ii) 5 or 7

PART - D

Answer the following question. It carries TEN marks

[1 x 10 = 10]

21. Gracy the canteen manager wants to analyze the daily sales of different food items to improve inventory planning. The weekly sales data (in number of items sold) is as follows:

Food Item	Number of Items Sold
Sandwiches	150
Bufs	200
Samosa	180
Rolls	120
Beverages	250
Ice-creams	100

The manager wants to represent this data using a pie chart to visualize the proportion of each food item in total sales.

Questions to be answered:

- Calculate the total number of food items sold in a week.
- Find the percentage share of each food item in total sales.
- Construct a pie chart showing the angles of each food items.
