Roll No:
Date:

St. Claret College

Autonomous, Bengaluru

UG END SEMESTER EXAMINATION- MAY 2026

BBA - II SEMESTER

BM 2424: DATA ANALYSIS FOR BUSINESS DECISIONS

12

TIME: 3 hours **MAX. MARKS: 80**

This paper contains FOUR 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]**

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1. Which of the following is NOT a characteristic of statistics?
   a) Statistics deals with individual values only
   b) Statistics is based on numerical facts
   c) Statistics involves data collection, analysis, and interpretation
   d) Statistics helps in decision-making

2. A company's annual revenue for five years is represented as a pie chart. What does the largest sector in the pie chart indicate?
   a) The highest revenue year
   b) The year with the lowest profit
   c) The average revenue over the years
   d) The year with the lowest revenue

3. The marks obtained by five students in a test are 50, 60, 70, 80, 90. What is the arithmetic mean of their marks?
   a) 90 b) 65 c) 75 d) 70

4. Given the regression equation $Y = 5 + 2X$, what is the predicted value of Y when $X = 10$?
   a) 20 b) 25 c) 30 d) 35

5. A company uses a 3-year moving average to forecast sales. If sales for three consecutive years are 500, 550, and 600, what is the moving average for year 2?

a) 600 b) 550 c) 500 d) 650

6. Which of the following is an example of a qualitative variable?

a) Height of students b) Monthly salary of employees
c) Blood group of patients d) Marks obtained in an exam

7. What is the best method for presenting data when the number of observations is very large?

a) Textual presentation b) Tabular presentation c) Pie chart d) Bar graph

8. If the regression coefficients $b_{xy}=0.8$, $b_{yx}=0.5$, what is the value of the correlation coefficient r?

a) 0.6 b) 0.8 c) 0.5 d) 0.4

9. If two events A and B are independent, what is true about their probabilities?

a) $P(A \cap B) = P(A)+P(B)$
b) $P(A \cup B) = P(A)P(B)$
c) $P(A|B) = P(B)$
d) $P(A \cap B) = P(A)P(B)$

10. A box contains 4 red balls, 3 blue balls, and 5 green balls. If one ball is drawn at random, what is the probability of drawing a blue ball?

a) 1/2 b) 1/6 c) 1/4 d)1/3

PART-B

Answer any THREE questions. Each answer carries EIGHT marks [3 x 8 = 24]

11. Calculate the modal wages.

Weekly Wages (in Rs.'00)	20-25	25-30	30-35	35-40	40-45	45-50
No. of Labours	1	3	8	12	7	5

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.

Value	110-120	120-130	130-140	140-150	150-160	160-170	170-180	180-190	190-200
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 Statistics	45	70	65	30	90	40	50	75	85	60
Marks in Marketing	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 next 3 years.

20. A box contains 50 coins numbered from 1 to 50. One coin is drawn at random. Find the probability that the number on the coin 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. Flatworld Solutions Ltd, a data analytics company specializing in statistical research, has been hired to analyze the frequency distribution of customer transactions for a retail store. The management wants to understand purchasing patterns and determine the median transaction size using statistical methods.

The store's transaction data for different ranges of purchase amounts (in lakh) is summarized as follows:

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

As a data analyst at Flatworld Solutions Ltd, you are required to help the management by performing the following tasks:

i. Construct both a Less Than Ogive and More Than Ogive curve based on the given frequency distribution.

ii. Using the ogive curves, determine the median transaction size graphically.

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