(NO. OF PAGES: 3)

(FOR THE CANDIDATES ADMITTED 2023 DURING THE ACADEMIC YEAR 2024 ONLY) **24UBP4A1**

REG.NO. :

N.G.M.COLLEGE (AUTONOMOUS) : POLLACHI

END-OF-SEMESTER EXAMINATIONS: MAY 2026

BCOM BPS **MAXIMUM MARKS: 75**

SEMESTER-IV **TIME: 3 HOURS**

PART - III

24UBP4A1– STATISTICAL METHODS

SECTION – A (10 X 1 = 10 MARKS)

ANSWER THE FOLLOWING QUESTIONS. (K1)

1. The arithmetic average of a set of observations is called:
   a) Median b) Mode c) Mean d) Range
2. Karl Pearson's method is used to measure:
   a) Kurtosis b) Dispersion c) Skewness d) Correlation
3. The rank correlation coefficient was developed by:
   a) Karl Pearson b) Fisher c) Bowley d) Spearman
4. Index numbers are expressed in
   a) Absolute numbers b) Percentages c) Ratios only d) Fractions only
5. The method used to measure long-term trend in time series is
   a) Moving Average b) Seasonal Index c) Irregular variation d) Index Numbers

ANSWER THE FOLLOWING IN ONE (OR) TWO SENTENCES (K2)

6. Define the term "Harmonic Mean."
7. What is skewness?
8. State the possible values of Karl Pearson's coefficient of correlation
9. What is a price index number?
10. What is seasonal variation in a time series?

SECTION – B (5 X 5 = 25 MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS. (K3)

11. a) Explain the importance and applications of statistics in business decision making with examples.

(OR)

b) Calculate the Mean, Median, and Mode from the following data and interpret the results.

Class Interval	0 - 10	10-20	20-30	30-40	40-50
Frequency	5	8	15	16	6

(CONTD …. 2)

Ethical paper

12. a) Explain the methods of measuring dispersion and discuss the merits and demerits of Standard Deviation.

(OR)

b) Calculate range and co efficient of range

10,12,13,16,11,12,13,10,15,19

13. a) From the following data, calculate Karl Pearson's coefficient of correlation and interpret the result.

X	10	12	13	16	17	20	25
Y	20	22	23	27	28	30	35

(OR)

b) Compute the coefficient of correlation between X and Y:

X	10	12	18	8	13	20	22	15	5	17
Y	88	90	94	86	87	92	96	94	88	85

14. a) Calculate Laspeyres' price index using the following data:
Base Year: P1 = 5, Q1 = 10; P2 = 6, Q2 = 15
Current Year: P1 = 7, Q1 = 12; P2 = 8, Q2 = 18

(OR)

b) What are the limitations of index numbers?

15. a) Draw the trend line by graphic method and estimate the production in 2003.

Year	1995	1996	1997	1998	1999	2000	2001
Prodn.	20	22	25	26	25	27	30

(OR)

b) Explain the methods of sampling.

SECTION – C (5 X 8 = 40 MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS. (K4 (Or) K5)

16. a) Draw a Pie diagram to represent the following data:

Item		Food	Cloth	Rent	Other Expenses
Family	A	240	160	80	200
	B	300	300	200	400

(OR)

b) Calculate Mean, Median and Mode:

Marks	Below 10	Below 20	Below 30	Below 40	Below 50
Students	3	8	17	20	22

(CONTD ….3)

Ethical paper

17. a) The following table shows the marks obtained by students in a test. Calculate Karl Pearson's coefficient of skewness and interpret the result.

Marks	0 - 10	10-20	20-30	30-40	40-50	50-60
No.of Students	5	8	12	20	10	5

(OR)

b) Calculate the standard deviation and coefficient of variation for the following data: 20, 25, 30, 35, 40.

18. a) From the following information on values of two variables X and Y, Find the two regression lines and the correlation coefficient:

N=10;∑X=20;∑Y=40;∑x2=240;∑Y2=410;∑XY=200

(OR)

b) Calculate the correlation coefficient for the following data:

X: 10, 15, 20, 25, 30

Y: 12, 18, 24, 30, 36

19. a) Calculate Fisher's Ideal Index from the following data:

Base Year: P1 = 2, Q1 = 4; P2 = 3, Q2 = 5

Current Year: P1 = 4, Q1 = 3; P2 = 6, Q2 = 7

(OR)

b) Discuss the different methods of constructing index numbers along with their applications.

20. a) Find the 3 year moving average from the following time series data

Year	1967	1968	1969	1970	1971	1972	1973	1974
Sales (in tones)	4	7	10	16	20	25	32	40

(OR)

b) Fit a straight line trend equation to the following data by the method of least squares and estimate the value of sales for the year 1985.

Year	1979	1980	1981	1982	1983
Sales	100	120	140	160	180

****

Ethical paper