

(FOR THE CANDIDATES ADMITTED

SUB CODE

23UBP4A1

DURING THE ACADEMIC YEAR 2023 ONLY)

REG.NO. :

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

END-OF-SEMESTER EXAMINATIONS : MAY 2025

B.Com (BPS)

MAXIMUM MARKS: 75

SEMESTER-IV

TIME : 3 HOURS

PART – III

23UBP4A1 – STATISTICAL METHODS

SECTION – A (10 X 1 = 10 MARKS)

ANSWER THE FOLLOWING QUESTIONS. (K1)

1. What is the measure of central tendency that is least affected by extreme values?
(a) Mean (b) Median (c) Mode (d) Geometric Mean
2. Which measure of dispersion considers all data points in a dataset?
(a) Range (b) Quartile Deviation (c) Standard Deviation (d) Mean Deviation
3. The value of Karl Pearson's coefficient of correlation always lies between: _____
(a) 0 and 1 (b) -1 and 1 (c) 0 and ∞ (d) $-\infty$ and $+\infty$
4. Which index number formula gives equal importance to base-year and current-year quantities?
(a) Laspeyres' Index (b) Paasche's Index (c) Fisher's Index (d) Simple Index
5. Which of the following is a component of time series?
(a) Seasonal variations (b) Sampling error (c) Mean Deviation (d) Correlation

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) Calculate the mean for the following data: 5, 7, 10, 12, 6.
(OR)
b) Explain any two characteristics of statistics.
12. a) Calculate the range and quartile deviation for the data: 15, 18, 22, 25, 30.
(OR)
b) Describe the significance of standard deviation in data analysis?
13. a) Calculate Karl Pearson's correlation coefficient for the following pairs of values:
(2,3), (4,5), (6,7), (8,9).
(OR)
b) Differentiate between positive and negative correlation.

14. a) Calculate Laspeyres' price index using the following data:
 Base Year: $P_1 = 5, Q_1 = 10; P_2 = 6, Q_2 = 15$
 Current Year: $P_1 = 7, Q_1 = 12; P_2 = 8, Q_2 = 18$
(OR)
 b) List the limitations of index numbers?
15. a) Calculate the trend using the method of moving averages for the following data: 5, 6, 7, 5, 6, 7 (3-year moving average).
(OR)
 b) Differentiate between sampling and non-sampling errors.

SECTION – C**(5 X 8 = 40 MARKS)****ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS. (K4 (Or) K5)**

16. a) Outline the methods of presenting data diagrammatically with examples.
(OR)
 b) Calculate the mean, median, mode, and geometric mean for the following data: 4, 6, 5, 7, 4, 5, 6.
17. a) Calculate the standard deviation and coefficient of variation for the following data: 20, 25, 30, 35, 40.
(OR)
 b) Discuss Karl Pearson's and Bowley's measures of skewness with suitable examples.
18. a) Calculate the correlation coefficient for the following data:
 X: 10, 15, 20, 25, 30
 Y: 12, 18, 24, 30, 36
(OR)
 b) Discuss the significance of correlation analysis in business decision-making.
19. a) Calculate Fisher's Ideal Index from the following data:
 Base Year: $P_1 = 2, Q_1 = 4; P_2 = 3, Q_2 = 5$
 Current Year: $P_1 = 4, Q_1 = 3; P_2 = 6, Q_2 = 7$
(OR)
 b) Discuss the different methods of constructing index numbers along with their applications.
20. a) Calculate the trend component using the least squares method for the following data:
 Year: 2015, 2016, 2017, 2018, 2019
 Sales: 100, 120, 140, 160, 180
(OR)
 b) Summarise the various methods of measuring trends in a time series, with practical applications in forecasting.

Ethical paper