



Dezyne École College

Bachelor of Computer Application (B.C.A.) Third Year-5th Semester
Computer Based Statistics

University Exam Probable Questions

UNIT 1

1. Define statistical population and differentiate it from a sample with suitable examples.
2. What is the difference between qualitative and quantitative data? Give one example each.
3. Differentiate between discrete and continuous data. Provide an example of each from real life.
4. Explain the difference between frequency data and non-frequency data.
5. Define and distinguish between geographical and chronological data with examples.
6. Write short notes on:
 - (a) Cross-sectional data
 - (b) Time-series data
7. What is primary data? How is it collected? Explain any three methods.
8. Define secondary data. What are the main sources of secondary data?
9. Differentiate between primary and secondary data with suitable examples.
10. Give advantages and limitations of using secondary data.
11. What are the main components of a statistical table? Explain each briefly.
12. Construct a simple table to represent monthly sales data for a garment shop for 6 months.
13. Explain different types of tables used in statistical data presentation with examples.
14. Define frequency distribution. Explain how to construct:

- (a) Discrete frequency distribution
- (b) Grouped frequency distribution
- (c) Continuous frequency distribution
- (d) Cumulative frequency distribution

15. What is a histogram? Draw a histogram for the following data:

Class Interval	Frequency
0-10	5
10-20	8
20-30	12
30-40	10
40-50	5

16. Differentiate between histogram and bar graph with examples.
17. Draw a frequency polygon and frequency curve for a given grouped frequency distribution.
18. What are ogives? How do you construct 'less than' and 'more than' ogives?
19. Explain box plot. How does it help in understanding data distribution and outliers?
20. What are the advantages and limitations of graphical presentation of data in statistics?

UNIT 2

1. Define Mean, Median, and Mode. How are they useful in summarizing quantitative data?
2. Compute the arithmetic mean for the following data: 8, 12, 15, 10, 20, 25.
3. Differentiate between median and mode. Give examples of real-life situations where each is more appropriate.
4. For the following grouped data, calculate the median:

Class Interval	Frequency
0–10	5
10–20	8
20–30	12
30–40	10
40–50	5

5. Discuss the merits and limitations of mean, median, and mode.
6. Define and differentiate the four types of measurement scales: nominal, ordinal, interval, and ratio.
7. Give one real-life example each for nominal, ordinal, interval, and ratio scale.
8. Why is it important to understand the level of measurement in statistical analysis?
9. What is univariate data? How is it different from bivariate and multivariate data?
10. Explain the concept of dispersion. Why is it important in statistical analysis?
11. Compute the standard deviation for the data: 5, 10, 15, 20, 25.
12. Differentiate between absolute and relative measures of dispersion with examples.
13. Explain variance and standard deviation. How are they related?
14. What is coefficient of variation? When is it used?
15. Define raw moments and central moments. How are they computed from data?
16. Explain the concept of skewness. What does positive and negative skewness indicate?

17. Define kurtosis. How does it help in understanding the shape of a data distribution?
18. Differentiate between absolute and relative measures of skewness.
19. Using the moment method, compute the skewness of the following data: 2, 4, 6, 8, 10.
20. What are the characteristics of a normal distribution in terms of skewness and kurtosis?

UNIT 3

1. State the principle of least squares. Why is it used in curve fitting?
2. Fit a straight line to the following data using the least squares method:

X	1	2	3	4	5
Y	2	4	5	4	6

3. Explain how a parabola is fitted using the least squares method. When is it preferred over a straight line?
4. Show how the equation of an exponential curve $y = ae^{bx}$ can be reduced to a straight line for fitting purposes.
5. Distinguish between fitting of power curve and exponential curve. Give example applications.
6. Define class frequency. Explain with an example.
7. What is the order of a class frequency? Illustrate using three attributes A, B, and C.
8. Define ultimate class frequencies. How are they determined from raw data?
9. What does consistency of data mean in the context of attributes? Give necessary conditions.
10. Differentiate between independence and association of attributes with suitable examples.
11. What are positive and negative associations of attributes? Explain with a 2x2 contingency table.
12. Explain any two measures used to determine the degree of association between two attributes.
13. What is correlation? How does a scatter diagram help in visualizing correlation?
14. Differentiate between positive, negative, and zero correlation with graphical sketches.
15. Explain Pearson's coefficient of correlation. Write the formula for both ungrouped and grouped data.
16. Explain correlation of bivariate frequency distribution and how it's calculated.
17. Define regression. How is it different from correlation?
18. Derive the regression line of Y on X from the formula of least squares.

19. What are regression coefficients? Write their properties.
20. Prove that the correlation coefficient r is the geometric mean of the two regression coefficients.