REV-01
BEC/03/08

2025/11

SET A

BA ECONOMICS
THIRD SEMESTER
STATISTICAL METHODS FOR ECONOMICS
BEC – 302
[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 3 hrs. **Full Marks: 70**

Objective

Time: 30 mins. **Marks: 20**

Choose the correct answer from the following: ***1×20=20***

1. Statistics deals mainly with
   a. Numerical data
   b. Spiritual data
   c. Historical data
   d. Verbal statements

2. The group of individuals or items under study is called:
   a. Sample
   b. Population
   c. Variable
   d. Class interval

3. Which of the following is a measure of central tendency?
   a. Standard Deviation
   b. Mode
   c. Range
   d. Coefficient of Variation

4. The sum of observations divided by the number of observations is
   a. Median
   b. Arithmetic Mean
   c. Mode
   d. Range

5. The middle value when data is arranged in order is called
   a. Mode
   b. Mean
   c. Median
   d. Range

6. Find the mode of the data: 3, 5, 5, 8, 9.
   a. 3
   b. 9
   c. 8
   d. 5

7. The geometric mean of 4 and 16 is
   a. 8
   b. 5
   c. 10
   d. 4

8. Variance is the square of
   a. Standard Deviation
   b. Mean
   c. Median
   d. Range

9. Correlation measures the
   a. Dispersion of variables
   b. Relationship between variables
   c. Average of variables
   d. Sampling error

10. Karl Pearson's correlation coefficient lies between:
    a. 0 and 1
    b. $-\infty$ and $+\infty$
    c. -1 and +1
    d. 1 and 10

11. If r = 1, it indicates:
    a. No correlation
    b. Perfect positive correlation
    c. Perfect negative correlation
    d. Low correlation

12. The mean of the numbers 5, 10, 15, 20, and 25 is:
    a. 5
    b. 15
    c. 8
    d. 10

13. In regression, the variable being predicted is called:
    a. Independent variable
    b. Explanatory variable
    c. Constant variable
    d. Dependent variable

14. The regression line is also known as:
    a. Line of best fit
    b. Frequency curve
    c. Lorenz curve
    d. Ogive

15. Index numbers are mainly used to measure:
    a. Prices and quantities over time
    b. Mean and median
    c. Regression coefficients
    d. Dispersion

16. The year with which index numbers are compared is called:
    a. Current year
    b. Base year
    c. Fiscal year
    d. Mean year

17. Laspeyres Price Index uses:
    a. Current year quantities
    b. Base year quantities
    c. Average quantities
    d. Weighted prices

18. Paasche Price Index uses:
    a. Base year quantities
    b. Average quantities
    c. Current year quantities
    d. Only prices

19. The empirical relationship between mean, median, and mode is given by:
    a. Mode = Mean - 2 Median
    b. Mode = 2 Mean - 3 Median
    c. Mode = 3 Median - 2 Mean
    d. Mean = 3 Mode - 2 Median

20. Standard deviation is a measure of:
    a. Central tendency
    b. Correlation
    c. Dispersion
    d. Skewness

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Descriptive

Time : 2 Hr. 30 Mins. **Marks : 50**

[Answer question no.1 & any four (4) from the rest]

1. Discuss the scope of statistics and explain the concepts of population and sample using suitable examples. 8+2=10

2. Explain the major divisions of statistics in detail with suitable examples. 10

3. Explain the concept of correlation. How does it differ in the cases of positive, negative, and zero correlation? Illustrate your answer with suitable examples. 4+6=10

4. What is Karl Pearson's Coefficient of Correlation? The coefficient of correlation between two variables X and Y is 0.48. The covariance is 36. The variance of X is 16. Find the standard deviation of Y. 2+8=10

5. Calculate the mean, median and mode from the following data: 10

Class Interval	0-10	10-20	20-30	30-40	40-50	50-60
Frequency (f)	5	8	15	16	6	4

6. Explain the concept of regression analysis. Discuss the types of regression, and state how regression differs from correlation. Also, mention the importance of regression analysis in economics. 3+5+2=10

7. Define Variance and Standard Deviation. Find the Variance and Standard Deviation for the following data: 2+8=10

Observation (X)	5	7	3	9	6

8. Construct Laspeyres Price Index, Paasche Price Index, and Fisher's Ideal Index for the following data: 10

Commodity	Base Year Price (p_0)	Base Year Quantity (q_0)	Current Year Price (p_1)	Current Year Quantity (q_1)
A	4	5	6	6
B	2	8	3	10
C	5	4	7	5

Calculate:

a) Laspeyres Price Index
b) Paasche Price Index
c) Fisher's Ideal Index

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