Seat No.	

Set A

B.C.A (Part -II) (Semester - III) (CBCS) Examination
Oct. /Nov. – 2023

College Name: - Kamala College, Kolhapur

Subject Name:-Elements of Statistics

Subject Code: 83377 **Total Marks: 70**

Day and Date: - Friday, 01/12/2023 **Period:3 hours**

Time: 10.30 am. To 01.30 pm. **Total pages: 3**

Instructions

1) Figures to the right indicate full marks

2) Q.1 & Q.6 are compulsory and attempt any three from Q.2 to Q.5

Q.1. A] Choose the correct alternative: [10 Marks] **[20]**

1. When a researcher collects data by conducting interviews, observations, or experiments, it is known as:
   a) Primary data
   b) Secondary data
   c) Tertiary data
   d) Quaternary data

2. ..... divides the data into four equal parts.
   a) Mean
   b) Mode
   c) Median
   d) Quartile

3. The measures of dispersions cannot be
   a) positive
   b) negative
   c) zero
   d) All the above

4. Which of the following is NOT a measure of central tendency?
   a) Median
   b) Mode
   c) Range
   d) Mean

5. A No correlation is signified by
   a) 0
   b) +1
   c) -1 to +1
   d) -1

6. In the regression equation Y= 80+ 0.4 X, the then estimated value of Y when X=0 is
   a) 80
   b) 80.4
   c) 0.4
   d) none of these

7. Which of the following is a measure of association used to analyze the strength and direction of a relationship between two variables?
   a) Correlation coefficient
   b) Mode
   c) Standard deviation
   d) Variance

8. In time series analysis changes are unpredictable for the
   a) Secular trend
   b) Seasonal Variation
   c) Random variation
   d) Cyclic variation

9. Prosperity, Recession, and depression in business is an example of
   a) Cyclic variation
   b) Secular trend
   c) Irregular variation
   d) Seasonal variation

10. What type of sampling technique involves dividing the population into subgroups and then taking a random sample from each subgroup?
   a) Simple random sampling
   b) Systematic sampling
   c) Stratified sampling
   d) Convenience sampling

B] Attempt any Two: [10 Marks]
   a) Explain Primary and Secondary data.

b) State empirical relation between mean, median, and mode. Use it to estimate the mode of the distribution whose mean is 26.8 and the median is 27.6.

c) Define the coefficient of variation (CV) for a distribution. The CV and mean of the data are 80% and 20 respectively, and find the variance of data.

Q.2. Following data represents the number of students admitted for BCA courses in a certain college **[10]**

Classes:	BCA-I	BCA-II	BCA-III
Students	70	65	45

Draw a Bar and Pie-diagram for the above data.

Q.3. Define Mean, Median, and Mode. Calculate the same for the following data. **[10]**

X:	1	2	3	4	5	6	7	8	9
Freq:	8	10	11	16	20	25	15	9	6

Q.4. Define Spearman's rank and Karl Pearson's correlation coefficient. Calculate Spearman's rank correlation coefficient (R) between the two kinds of assessment of graduate student's performance in a college and interpret it.

[10]

Internal Marks (X)	51	68	73	46	50	65	47	38	60
External Marks (Y)	49	72	74	44	58	66	50	30	35

Q.5. Explain Secular Trends in time series. Find 2 yearly moving averages for the following data. Also, plot the trend value along with the original on graph paper. **[10]**

Year	2011	2012	2013	2014	2015	2016	2017	2018
Values	10	12	11	14	9	10	13	11

Q.6. Write notes on any four. **[20]**

a) Scatter Diagram.
b) Requirements of good average.
c) Quantitative and Qualitative classification.
d) Simple Random Sampling .
e) Cyclic Variation in time series.
f) Coefficient of variation (C.V).

****