Seat No.	

QP Code: 1399QP

Total No. of Pages: 3

January - February (Winter) Examination - 2023

Subject Name: B.C.A. (CBCS)_83377_Elements of Statistics_17.01.2023_10.30 AM To 01.30 PM

Subject Code: 83377

Day and Date: Tuesday, 17-01-2023 (B.C.A-II, SEM-III)

Time: 10:30 am to 01:30 pm

Total Marks: 70

Instructions.:

1) Figures to the right indicate full marks
2) Use of calculator and statistical table is allowed

Special Instruction.:

Que. 1 and Que. 6 are compulsory and attempt any three Questions from Que. No. 2 to Que. No. 5

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

1. Any data collected by investigator himself is called as _____.
   a) primary data
   b) secondary data
   c) future data
   d) collected data
2. We must arrange the data in ascending or in descending order before calculating _____.
   a) Mean
   b) Mode
   c) Median
   d) Standard deviation
3. The measures of dispersion can never be_____.
   a) positive
   b) negative
   c) zero
   d) greater than zero
4. _____ is an absolute measure of dispersion.
   a) Coefficient of variation
   b) Coefficient of dispersion
   c) Standard deviation
   d) Mean
5. A perfect positive 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 intercept is _____.

a) 80
b) 0.4
c) 80.4
d) none of these

7. The signs of regression coefficients and correlation coefficient are always _____.

a) positive
b) negative
c) same
d) apposite

8. Increase in the number of patients in the hospital due to heat stroke is_____.

a) secular trend.
b) seasonal variation.
c) irregular variation.
d) cyclical variation.

9. A time series has _____.

a) four components
b) three components
c) two components
d) one component.

10. SRSWR stands for _____.

a) Simple Random Sample Without Replacement
b) Simple Random Sample With Replacement
c) Stratified sampling
d) none of these

B] Attempt any Two: [10 Marks]

a) Give the advantages of sampling method over Census method.

b) The mean marks in statistics of 100 students of a class is 72. Of them the mean marks of 70 boys is 75. Find the mean marks of girls in the class.

c) State the relation between correlation coefficient and two regression coefficient.

If r = - 0.6 and byx = - 0.3 then find bxy.

Q.2. Explain the construction of histogram. Draw a histogram and hence determine the value of mode from the following data. [10]

Class	0-10	10-20	20-30	30-40	40-50	50-60
Frequency	3	5	9	4	4	3

Q.3. Define Standard deviation and range. Calculate S.D. And C.V. for the following data. [10]

Class	0-5	5-10	10-15	15-20	20-25
Frequency	13	17	15	25	10

Q.4. **State regression coefficients and equations of two regression lines** **[10]**

Given: Mean(X) = 40, Mean(Y) = 50, σx (S.D. of X) = 2.5, σy (S.D. of Y) = 3.5 and r = 0.8.

Obtain the equations of two regression lines.Also obtain the best estimate of X when Y= 45 and that of Y when X= 55.

Q.5. **Explain Seasonal variation in time series.** **[10]**

Find 4 yearly centered moving averages for following data. Also plot trend value along with original on graph paper.

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Sale	21	15	16	29	51	58	36	16	23	28

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

a) Scatter diagram.
b) Requirements of good measures of dispersion.
c) Scope of Statistics.
d) Stratified Sampling.
e) Irregular variation in time series.
f) Coefficient of variation (C.V).