F.Y. B.Sc. (Computer Science)
STATISTICS
CSST-111 : Descriptive Statistics-I
(2019 Pattern) (Semester - II)

Time : 2 Hours]   *[Max. Marks : 35*
Instructions to the candidates:
1) *All questions are compulsory.*
2) *Figures to the right indicate full marks.*
3) *Use of calculator and statistical tables is allowed.*
4) *Symbols and abbreviations have their usual meaning.*

Q1) Choose the most appropriate alternative for each of the following.**[1 mark each]**

    a)   In frequency distribution ogive curves represent graphically the

      i)   cumulative frequency   ii)   relative frequency

      iii)   frequency   iv)   raw data

    b)   The middle most observation of ordered data is the

      i)   arithmetic mean   ii)   mode

      iii)   first quartile   iv)   median

    c)   The standard deviation of the data set (7, 7, 7, 7, 7,) is

      i)   7   ii) $\sqrt{7}$

      iii)   0   iv)   1

    d)   The coefficient of association for two attributes lies between

      i)   −1 and +1   ii)   0 and 1

      iii)   −1 and 0   iv)   0 and 2

Q2) Attempt any FIVE of the following. **[2 marks each]**

    a)   Explain with illustration each of the following:

        i)   variable

        ii)   open end class

    b)   Define exclusive type of class interval. Convert the following class intervals to equivalent exclusive class intervals

        50-59

        60-69

        70-79

    c)   A group of 10 observations has arithmetic mean 25. One more observation of value 30 is added to the group. Find the arithmetic mean of the new group.

    d)   The mean of 10 observations is 50 and coefficient of variation is 20%. Find the value of the variance.

    e)   If the distribution is positively skewed state the relationship between

        i)   Mean, median, mode

        ii)   Quartiles

    f)   Define central moments. Also write the expression for fourth central moment.

    g)   Write the conditions of consistency for a single attribute A.

    h)   Define

        i)   Ultimate class frequency

        ii)   Positive classes

Q3) Attempt any TWO of the following. **[4 marks each]**

    a)   Define the arithmetic mean for a grouped frequency distribution. Also state its merits.

    b)   Explain the relative measures of dispersion. How they are better than absolute measures of dispersion?

    c)   The data given below is related to marks obtained by two groups of students.

	Group I	Group II
Size	100	50
Mean	60	40
Variance	9	4

        Which group is more consistent in performance? Justify.

Q4) Attempt any TWO of the following. **[4 marks each]**

    a)   Write a short note on stem and leaf chart.

    b)   If A and B are independent attributes then show that the attributes:

          i) α and B are also independent.

          ii)   A and β are also independent.

    c)   For a moderately skewed distribution, the mean is 29.6 and the standard deviation is 6.5 and Pearson's coefficient of skewness is 0.32. Find the made and the median of the distribution.

Q5) Attempt any ONE of the following. **[5 marks each]**

    a)   Explain the types of skewness with the help of sketches. State the formula of any one of the measures of skewness.

    b)   Let attributes A and B represent 'going to morning walk' and 'fit'.

         Compute Yule's coefficient of association for the given information and comment on it. N = 200; (A) = 120; (B) = 100; (AB) = 80

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