H – 2096

Reg. No. : ....

Name : ....

First Semester B.Sc. Degree Examination, November 2019

First Degree Programme Under CBCSS

Complementary Course for Mathematics

ST 1131.1 : DESCRIPTIVE STATISTICS

(2018 Admission onwards)

Time : 3 Hours   Max. Marks : 80

SECTION – A

Answer **all** questions : Each question carries **1** mark

1. What is nominal scale.

2. Define primary data?

3. What is percentage bar diagram?

4. Name any two sources of secondary data.

5. What do you mean by random sampling?

6. What is scatter plot?

7. Define coefficient of variation

8. Define Skewness

9. What is the relationship between correlation coefficient and regression coefficient?

10. What is the expression of Spearman's rank correlation coefficient?

(10 × 1 = 10 Marks)

SECTION – B

Answer **any eight** questions. Each question carries **2** mark.

11. Distinguish between questionnaire and schedule?

12. What is time series graphs? When false base line is used in line graphs?

13. What is sampling survey? What are the advantage of sampling over census?

14. Distinguish between SRSWOR and SRSWR.

15. What is sampling error? How it is different from non-sampling error?

16. Define Harmonic mean (HM) Give a situation where HM is used.

17. What is coefficient of variation? When it is used?

18. Distinguish between raw moments and central moments.

19. What is pie chart? When it is used?

20. List out any four non-random sampling methods.

21. Define Mean Deviation? What are its merits?

22. Define Pearson's and Bowleys measures of skewness

(8 × 2 = 16 Marks)

SECTION – C

Answer **any six** questions. Each question carries **4** mark.

23. Write a short note on scales of measurement with examples.

24. Explain any two methods of collecting primary data?

25. Construct histogram for following data

Class	0–10	11–20	21–30	31–40	41–50	51–60
Frequency	7	13	22	10	7	4

26. Show that sum of squares of the deviations of observations is minimum, when it is taken from arithmetic mean.

27. Find the missing value, x for the following data, if its mean of distribution is 10.20

Observation	5	8	x	12	13	15
Frequency	9	9	11	8	4	9

28. Find Harmonic Mean of 2, 4, 6, 8.

29. For positive numbers, show that AM $\geq$ GM $\geq$ HM

30. Write a short note on curve fitting

31. Derive the expression for angle between two regression lines.

(6 × 4 = 24 Marks)

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SECTION – D

Answer **any two** questions. Each question carries **15** mark.

32. Explain any three methods of sampling. State merits and demerits of each method.

33. (a) Explain different measures of central values like arithmetic mean, median and mode

    (b) Compare quartile deviation and standard deviation. List out merits and demerits of each measures.

34. Following table shows the price of a particular commodity in Thiruvananthapuram and Kozhikode for six months

    Thiruvananthapuram 50 60 55 62 58 57

    Kozhikode   48 52 50 46 64 58

    Compare the consistency in prices of two cities.

35. (a) Derive Spearman's rank correlation?

    (b) Height and weight of ten students of a college is given below use Karl Pearson's method to check whether height and weight are correlated.

    Height (in cm) 140 130 152 148 150 160 162 140 150 148

    Weight (in cm) 40   38   45   42   42   55   50   46   48   45

    (2 × 15 = 30 Marks)