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SIS-N-070 B-19

B.Sc. I Semester (CBCS) Degree Examination

MATHEMATICAL STATISTICS

(Basic Statistics and Probability)

Paper : I (DSC-3A)

(New)

Time : 3 Hours **Maximum Marks : 80**

Instructions to Candidates:

1) Statistical tables, Graph Sheets, Simple Calculators are allowed.

SECTION-A

I. Answer the following questions. **(10×2=20)**

1) Define Secondary data and mention its sources.

2) Mention the four types of classification.

3) Find Median and Mode of the following:

2, 4, 8, 10, 6, 12, 8, 14, 8.

4) Define Quartiles and mention its types.

5) Define statistics.

6) How do you find mode graphically?

7) State any two properties of regression Co-efficients.

8) What are inclusive and exclusive class intervals?

9) Define negative correlation with an example.

10) If $P(A)=\frac{1}{2}$, $P(B)=\frac{1}{5}$ and $P(A\cap B)=\frac{1}{10}$, find $P(A\cup B)$.

SECTION-B

II. Answer any **FOUR** of the following: **(4×5=20)**

11) What are the points to be kept in mind while drafting a questionnaire?

12) What are the rules, should be kept in mind while construction of a frequency distribution?

13) How do you find Median graphically?

14) Find the standard deviation of first 'n' natural numbers.

15) What is Kurtosis? Explain with diagrams.

16) Explain multiple and partial correlation Co-efficients.

SECTION-C

III. Answer any **FOUR** of the following: **(4×10=40)**

17) Define classification. Explain the various types of classifications with examples.

18) Derive median formula for grouped data.

19) Define standard deviation. State and prove its properties.

20) State all the properties of correlation Co-efficients. Show that correlation Co-efficient is independent of change of origin as well as scale.

21) What are partition values? Explain quartiles and deciles.

22) State and prove the addition theorem of probability for

i) Any two events and

ii) Independent events.