QP Code: UV25DR015

Reg. No : .....
Name : .....

ST MARY'S COLLEGE (AUTONOMOUS), THRISSUR-20

I SEMESTER (FYVP) DEGREE REGULAR EXAMINATIONS, NOVEMBER 2025
STA1VN101 : DESCRIPTIVE STATISTICS FOR DATA ANALYTICS
2025 Admission Onwards
(Credits: 4)

Time: 2 Hours **Maximum Marks: 70**

Section A

*Answer **all**. Each question carries **3** Marks.* ***(Ceiling: 24 Marks)***

1. Define statistics and explain its main characteristics.
2. What are the different methods of collecting primary data?
3. Distinguish between primary and secondary data.
4. What are the advantages of graphical representation?
5. What is a cumulative frequency distribution?
6. Construct a frequency distribution table for given data.
   The marks of 15 students are:
   45, 50, 55, 60, 50, 65, 70, 55, 60, 65, 70, 75, 80, 85, 90
7. Find the median and mode for a given data set.
   45, 50, 55, 60, 50, 65, 70, 55, 60, 70.
8. Compare arithmetic mean and median.
9. A bag contains 5 red balls and 3 green balls. A ball is drawn at random.

   - Event A: The ball is green
   - Event B: The ball is drawn after one red ball has already been removed

   Find P(A|B).
10. Judge which probability theorem fits best in a given problem situation.

Section B

*Answer **all**. Each question carries **6** Marks.* ***(Ceiling: 36 Marks)***

11. Apply partition values to divide the following dataset into quartiles and percentiles:
    Data (ordered): 5, 8, 10, 12, 15, 18, 20, 22, 25, 28.

Turn Over

12. Discuss the suitability of mean, median, and mode for skewed data and identify the best measure.
13. Two coins are tossed simultaneously. Find the probability that both coins show heads. Show all steps and explain your reasoning.
14. Analyze the use of independence and mutual exclusiveness in solving real-life probability problems.
15. Describe the main sources of secondary data.
16. A factory has two machines, A and B, producing widgets. Machine A produces 40% of the widgets, and Machine B produces 60%. The defective rates are 3% for Machine A and 4% for Machine B. If a randomly selected widget is defective, find the probability that it was produced by Machine A using Bayes' theorem. Outline all the steps in detail.
17. Define class interval. How is it determined?
18. State the advantages and limitations of using the mean as a measure of central tendency.

Section C

*Answer **any one**. **(1x10=10marks)***

19. In a class of 40 students,

    - 18 like Mathematics
    - 15 like Science
    - 8 like both Mathematics and Science

    Find the probability that a randomly selected student likes Mathematics or Science. Use the addition theorem and give step-by-step explanation.
20. Define probability. Explain the classical, relative frequency, and axiomatic

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