QP Code: U25DRIS045

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

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

I SEMESTER (FYUGP) DEGREE EXAMINATIONS, NOVEMBER 2025
(Regular/Improvement/Supplementary)
STA1MN101 : Descriptive Statistics for Data Science
2024 Admission Onwards
(Credits: 4)

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

Section A

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

1. Define attributes.
2. Define secondary data.
3. What is a frequency table?
4. Write any one drawback of simple bar diagram.
5. Give an example where harmonic mean is used as a measure of central tendency.
6. What is the variance of a set of values with mean and coefficient of variation are respectively 20 and 60%?
7. The mean mark of 100 students was given to be 40. It was found later that a mark 53 was read as 83. What is the corrected mean mark?
8. Define sample space. Give an example.
9. Given that $P(A) > 0$ and $P(B) > 0$. Prove if $P(A) = P(B)$ then $P(A|B) = P(B|A)$
10. If A, B, C are independent Show that $A \cup B$ and C are independent.

Section B

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

11. Distinguish between discrete and continuous data.
12. The data below give the yearly profits (in thousand of rupees) of two companies A and B. Draw multiple bar diagram and make the inferences from the diagrammatic representation.

Year	Profit (Company A)	Profit (Company B)
1994-95	120	90
1995-96	135	95
1996-97	140	108
1997-98	160	120
1998-99	175	130

13. Convert the following distribution into 'more than' frequency distribution.

Weekly wages less than	20	40	60	80	100
No of workers	41	92	156	194	201

Turn Over

14. The mean of marks in statistics of 100 students in a class was 72. The mean of marks of boys was 75, while their number was 70. Find out the mean marks of girls in the class.

15. Define (i) Range (ii) Quartile deviation (iii) Mean deviation

16. Prove that
$P(A \cup B \cup C) = P(A) + P(B) + P(C) - P(A \cap B) - P(A \cap C) - P(B \cap C) + P(A \cap B \cap C)$.

17. Probability that a man will be alive 25 years is 0.3 and the probability that his wife will be alive 25 years is 0.4. Find the probability that for 25 years.
   (a) Both will be alive.
   (b) Only the man will be alive.
   (c) Only the woman will be alive.

18. If A and B are independent events, prove : $P(A^c \cap B^c) = P(A^c)P(B^c)$

Section C

*Answer **any one**. Each question carries **10** Marks* ***(1x10=10marks)***

19. Obtain the mean deviation about median for the following data.

Class	10-20	20-30	30-40	40-50	50-60	60-70	70-80
Frequency	2	12	18	25	22	15	6

20. Two boxes contain respectively 2 red,3 black and 3 blue balls; 4 red,4 black and 2 blue balls. One of the boxes is selected randomly and two balls are drawn. They happened to be one red and one blue. What is the probability that they come from the second box?

****