

Introduction to Statistical Methods
(S1-23 AIMLCZC 418) – Assignment 1

AIML Section - 2

Each question carries 02 Marks (2 x 5 = 10 Marks)

Duration: 13th December 2023 – 29th December 2023

1) Submissions are individual

2) Solve these on paper, scan, and upload

3) Plagiarism results in zero marks

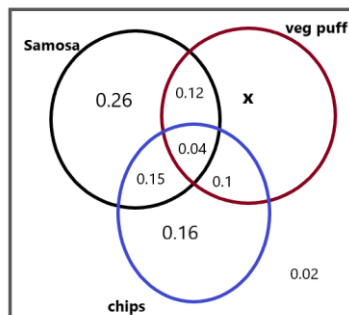
4) Write your name, BITS ID and Section on each page

1. In a garden, there are 39 plants. The heights (in cm) of 5 randomly selected plants are 38, 51, 46, 79, and 57. Calculate the Means and standard deviation of their heights.

2. Three professors, Prof. Anand, Prof. Bhanu Prakash and Prof. Chandra Shekhar appear in an interview for the post of Managing Director in a reputed company. Their chances of getting selected are $\frac{2}{9}$, $\frac{4}{9}$ and $\frac{1}{3}$ respectively. The probabilities that they introduce a new policy in the company are $\frac{3}{10}$, $\frac{1}{2}$ and $\frac{4}{5}$ respectively.

- i. What is the probability that new policy is introduced in the company?
- ii. What is the probability the new policy introduced is done by Prof. Anand?

3. In a certain school there are 500 students. The students of the school buy samosa, chips and vegpuffs from their canteen. The following data provides the probability of the student's preference of food sold in the canteen.



- i. Find x and What is the probability that students buy at least one of the items in the canteen?
- ii. What is the probability that a student buys chips if the student had already bought samosa?
- iii. What is the probability that a student buys veg puffs if he had already bought chips?
- iv. What is the probability that a student buys veg puffs if he had already bought samosa?

4. In a multiplex movie theatre, the seats are divided in to three sections namely Classic, Prime and Comfort. 45% of the seats are in Classic section, 30% of the seats are in Prime section and 25% of the seats are in Comfort section. In every section few seats are 'Preferred seats' which can be used to book for management. 2% of the seats in Classic Section, 12% of the seats in Prime section and 1% of the seats in Comfort section are preferred seats. Then

- i) What is the probability that you sit in Prime section if you have a preferred seat?
- ii) What is the probability that you sit in Comfort section if you don't have a preferred seat?

5. A standard deck of cards contains 52 cards. One card is selected from the deck. Compute the probability of randomly selecting a club or spade, compute the probability of randomly selecting a club or spade or diamond and compute the probability of randomly selecting a six or heart.

----ALL THE BEST----