Introduction to Statistical Methods

(S1-23_AIMLCZC418) – Assignment 1

AIML Section- 3

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. Calculate Population Variance and Population Standard Deviation for the given data.

X	11	13	15	17	19	21	23	25	27	29
Frequency	33	21	26	34	41	27	36	25	39	20

2. A letter is taken out randomly from the word "PROBABILITY" and the other letter is taken from "STATISTICS". Find the probability of getting both the letters same.

3. Suppose the probability of winning four persons say X, Y, Z and W in a hurdle race is P(X) = 0.25, P(Y) =0.25, P(Z) = 0.35, P(W) = 0.15. But on eleventh hour the player Z decided to not participate in a race and withdraws. Then find the new probabilities of X, Y and W's winning.
4. In a bolt factory, three machines M_1, M_2, and M_3 manufacture 2000, 2500, and 4000 bolts every day. Of their output 3%, 4%, and 2.5% are defective bolts. One of the bolts is drawn at randomly from a day's production and is found to be defective. What is the probability that it was produced by machine M_2?

5. There are two baskets A and B. Basket A contains 4 red and 4 blue marbles while Basket B does not contain any marble. Randomly three marbles are selected one by one without replacement from basket A and put it in the basket B. After that one marble is selected from each basket then find the probability of selected marble from basket A is red coloured.

---ALL THE BEST---