Introduction to Statistical Methods

(S1-25_AIMLCZC418) – Assignment 1

AIML Section- 6

Each question carries 2.5 Marks (2.5 x 4 = 10 Marks)
Duration:20th Nov, 2025 – 2nd December 2025
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
5) Only handwritten solutions with formula, full steps with proper justification are required.

Q1. Temperatures (in °C) measured at noon for 11 consecutive days are:

31, 29, 27, 34, 32, 28, 33, 29, 35, 26, 30.

(i) Compute the mean, median, variance, range, and range, and Q1, Q3 for this group.

(ii) Identify whether the data is left/right skewed.

(iii) Use the IQR method to identify the outliers in the data set.

Q2. In a class of 40 students, there are 18 boys and 22 girls. Out of the boys, 7 participate in sports and 6 scored an 'A' grade, with 3 boys involved in both. Among the girls, 9 participate in sports, 8 scored an 'A' grade, and 4 girls did both. If a student is picked at random, what is the probability the student is either involved in sports or scored an 'A' grade?

Q3. You have the following dataset:

Person	Trouble Sleeping	Low Energy	Anxiety	Has Depression
A1	Yes	Yes	Yes	Yes
A2	No	Yes	No	No
A3	Yes	No	Yes	Yes
A4	No	No	No	No

A new person arrives with: Trouble Sleeping = Yes, Low Energy = No, Anxiety = Yes.

Predict whether the person has depression using Naive Bayes Classifier.

Q4. In a university, 5% of engineering students and 2% of arts students score above 95% in the final exam. Additionally, 70% of the students are enrolled in arts. If a randomly selected student score above 95%, what is the probability that the student is an arts student?

----ALL THE BEST----