Assignment-2 (AIML SEC-1) July25

AIML_MFML Mid semester Assignment (Birla Institute of Technology and Science, Pilani)

Introduction to Statistical Methods

(S2-24_AIMLCZC418) – Assignment 2

AIML Section- 1

Each question carries 2.5 Marks (2.5 x 4 = 10 Marks)

Duration:21st July, 2025 – 10th August 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

Q1. Two independent samples have the following values:

Sample-1	11	11	13	11	15	9	12	14
Sample-2	9	11	10	13	9	8	10	_

Test the difference between the Means and give your inference.

Q2. Three experimenters determine the moisture content of samples, each man taking a sample from each of 4 consignments. The results are given below. Perform analysis of variance on these data and discuss whether there is any significant difference between consignments or between experiments.

Experiment	Consignment			
	I	II	III	IV
A	9	10	9	10
B	12	11	9	11
C	11	12	10	12

Q3. A sample of 64 students had an average exam score of 72. The population standard deviation (σ) is known to be 8. Construct a 95% confidence interval for the true population mean score.

Q4. The marks of 5 students in Math and Physics are:

Math (X): 50, 60, 70, 80, 90

Physics (Y): 55, 65, 65, 80, 85

(i) Compute Pearson's correlation coefficient, r.

(ii) Based on the r value interpret the relation between the subjects.