Course: Artificial Intelligence (CSC462)   **Class:** BSSE (6th A, 6th B)

Instructor: Dr. Mubashir Ahmad   **Date and Time:** Wednesday, 3rd July 2024, 08:30 AM

Maximum Marks: 20   **Maximum Time:** 50 minutes   0.88

Q 1. Write a Python code for the following. CLO6(PLO1-C3)

I. If x = [1, 2, 3, 4, 5], y = [1, 2, 1.3, 3.75, 2.25]   please write a python code to find slope B and intercept A using linear regression. Must use mean, variance and covariance manually (don't use automatic functions for Linear regression in python) and print out the values of A and B and print out the result **of Y = A*X + B where X = 10.**

II. If log(odds)=−64 + 2 * **hours** what would be the percentage of the success of a student if he/she study 33 hours using logistic regression in python. Also, how many hours a student should study to get **95%** success. Please print percentage of success and number of hours needed. All the code should be written manually, don't use the automatic functions for Logistic regression. For example, for logistic regression you must implement sigmoid function.