

*Assignment-1*

*Artificial Intelligence*

**INSTRUCTOR:** Click or tap here to enter text.

**CLASS:** *AML 1413*

* *Group task*
* *Time allowed: 3 weeks*
* *Due date:*
* *Total marks: 20*

**Instructions:**

*[Please answer the following questions manually and attach the pictures / screenshots along with codes, to compile a report - preferably Jupyter notebook]*

*Select any 5 questions of your choice out of the following 7 questions.*

*Q1. You draw two cards from pack of 52 shuffled cards (without replacement). Create a Python Program to generate a Probability Distribution Table for getting zero to at most 2 ACES. (4 Marks)*

*Q2. Bag I contain 2 red and 8 black balls while another Bag II contains 5 red and 5 black balls. One ball is drawn at random from one of the bags, and it is found to be black. Create a Python Program to find the probability that it was drawn from Bag 2. (4 Marks)*

*Q3. There are 3 red and 7 black balls in a bag. You are asked to draw 3 balls at random (with replacement) in three different trials. Create a Python program to find the probability of getting two red balls and one black ball? (4 Marks)*

*Q4. A Customer Call center receives on average 3.5 calls every hour. Write a Python Program to find the probability that it will receive at most 4 calls every hour? (4 Marks)*

*Q5. The Student Services at Cestar College receive 2 phone calls per hour. Write a Python Program to find the probability that a phone call will come within the next hour. (4 Marks)*

*Q6. Create a Python Program to generate the Eigen Value and Eigen Vector for the following Matrix (3x3 dimension) (4 Marks)*

*[8  5  3]*

*[5  6  5]*

*[9  7  4]*

*Q7. Create a Python program to find the Inverse of the following Matrix, using the concept shown in the class. Use of Linalg is restricted. (4 Marks)*

*[7 2]*

*[3 -5]*

Deliverables

a)    Completed Jupyter notebook

b)    a PDF version of Jupyter Notebook