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PRESIDENCY UNIVERSITY BENGALURU

Department of Research & Development

Mid - Term Examinations - AUUGUST 2024

Odd Semester: Ph.D. Course Work

Course Code: CSE5016

Course Name: ESSENTIALS OF MACHINE LEARNING

Department: PSCS

Date: 13/August/2024

Time: 09:30am –11 :00am

Max Marks: 50

Weightage: 25%

Instructions:

- (i) Read the all questions carefully and answer accordingly.
- (ii) Do not write any matter on the question paper other than roll number.

PART A (THOUGHT PROVOKING)

Answer all the Questions. Each question carries 5 marks.

(4Qx 5M= 20M)

1. Define Probability? Find the Probability for getting 5 when you roll a dice. (CO:01 BL:L1)
2. Outline Axioms of the Probability. (CO:01 BL:L2)
3. List and Define any 4 types of random variables. (CO:02 BL:L1)
4. How to measure Mean of a Random Variable. Explain? (CO:02 BL:L1)

PART B (PROBLEM SOLVING)

Answer all the Questions. Each question carries 10 marks.

(3Qx 10M= 30M)

5. a) What is the need of the bayes theorem. Explain in detail. (CO:01 BL:02)
b) Solve the following problem by using Bayes Theorem (CO:01 BL:03)
A letter is known to have come from 'TATANAGAR' or 'CALCUTTA'. On the envelop just 2 consecutive letters 'TA' are visible. What is the probability that the letter has come from 'TATANAGAR'.
6. The Given Random Variable(X)-{ 0,1,2,3,4,5,6,7 }, P(X)-{ 0,k,2k,2k,3k,k²,2k²,7k²+k }
Find 1) k 2) P(x<6) 3) P(0<x<5) 4) Distribution Function 5) if P(x<=C)>1/2 find the min. value of C.
(CO:02 BL:03)
7. Explain in detail about Probability Density Function with an Example. (CO:01 BL:05)