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CT-1 CSE 431 Machine Learning (Sec-C)

Total Marks-15 Time-40Mins

1. A university wants to predict whether a student will **pass (1) or fail (0)** a final examination based on two factors: **Study Hours per Week** and **Attendance Percentage**.

The following training data are collected:

Student	Study Hours (X_1)	Attendance % (X_2)	Pass (Y)
S1	2	55	0
S2	3	60	0
S3	4	65	0
S4	5	70	1
S5	6	75	1
S6	7	80	1
S7	8	85	1
S8	9	90	1

Calculate the value of z and the probability of passing for a student who studies 4 hours/week and has 65% attendance. Using a classification threshold of 0.5, determine whether the student is predicted to Pass or Fail. Calculate the probability of passing for a student who studies 7 hours/week and has 80% attendance. [10]

2. Define Outcome-Based Education (OBE).

3. Differentiate between Program Educational Objectives (PEOs), Program Outcomes (POs), and Course Outcomes (COs).

4. A student obtains 6 marks out of 12 marks in assessment items mapped to CO1. Calculate the CO1 attainment percentage. Determine whether CO1 is attained if the attainment threshold is 50%.

5. What is a Complex Engineering Problem (CEP)?

6. List the six cognitive levels of Bloom's Taxonomy in order from lower-order