Name: **Enrolment No:**	

UPES

End Semester Examination, May 2025

Programme Name: B.TECH CSE **Semester: 8th**

Course Name : Application of Machine Learning in Industries **Time : 03 hrs.**

Course Code : CSAI4003P **Max. Marks: 100**

Nos. of page(s): 02

Calculator allowed: Yes

Instructions: Please attempt according to the time provided and given weightage.

SECTION A
(5Qx4M=20Marks)

S. No.		Marks	CO
Q1	Discuss how banks can use machine learning techniques for credit scoring and fraud detection?	**4**	**3**
Q2	What is the XOR logic gate? Can a simple neural network learn it? Explain briefly.	**4**	**3**
Q3	Explain how Machine Learning is used in the healthcare sector for disease prediction and diagnosis.	**4**	**2**
Q4	Give two real-world examples of how companies use ML to improve customer experience in E-Commerce.	**4**	**2**
Q5	Discuss the following Term: Precision, Recall, F-Score, Accuracy	**4**	**1**
	SECTION B **(4Qx10M= 40 Marks)**		
Q6	Discuss any two classification algorithm with suitable example.	**10**	**2**
Q7	Explain how machine learning can help media and entertainment industries? Give at least two examples.	**10**	**1**
Q8	You are hired by a government agency to create an ML system for **cybersecurity anomaly detection**. **Describe your approach**: • What data you would collect • Which algorithms you might use • How to handle false positives/negatives	**3+3+4=10**	**2**
Q9	A healthcare provider has a dataset of 1,000 patient records with 10 features each. A logistic regression model is trained to predict disease likelihood and gives the following confusion matrix for a test set of 200 patients: Calculation : Precision , Recall, F-Score and Accuracy	**10**	**3**

	Predicted: Positive	Predicted: Negative
Actual: Positive	70	10
Actual: Negative	30	90

	SECTION-C **(2Qx20M=40 Marks)**		
Q10	**Discuss the impact of machine learning on the education sector** in terms of: • Student dropout prediction • Personalized learning pathways • Career assistance tools	**20**	**3**
Q11	**A telecom company wants to estimate the Customer Lifetime Value (CLV) using historical data.** They use the following formula: $$CLV = \frac{(A \times T \times P)}{1 + D}$$ **a)** Calculate the CLV for a customer using the formula. **b)** If the retention probability increases to 0.85, how does the CLV change? **c)** Discuss how ML models like logistic regression or survival analysis could predict "P" (retention probability).	**5+5+10**	**2**