

Subject Code: XXXXX

Roll No:

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**BTECH
(SEM-7) MACHINE LEARNING 2021-22**

TIME:3 HOUR

Total Marks: 100

Instruction: Attempt the questions as per the given instructions. Assume missing data suitably.

SECTION - A

Attempt *All Parts* in Brief

2*10 = 20

Q1	Questions	Marks
(a)	What is purpose of The Inductive Learning Hypothesis ?	2
(b)	Write the TPE for Handwriting Recognition Problem.	2
(c)	What is formula of Information Gain in Decision Tree Learning Algorithm ?	2
(d)	What is the role of Activation Function in ANN ?	2
(e)	Differentiate between Bias and Variance in ML.	2
(f)	What are Confidence Intervals in ML ?	2
(g)	What is Lazy Learning ?	2
(h)	What is K in KNN Learning?	2
(i)	What is Value-based reinforcement Learning ?	2
(j)	What is the Bellman Equation in Reinforcement Learning ?	2

SECTION - B

Attempt Any Three of the following

3*10 = 30

Q2	Questions	Marks
(a)	Giving an example, Explain the Concept Learning Task in ML.	10
(b)	Explain Adeline Network, highlighting its advantages over Perception.	10
(c)	What is the assumption in Naïve Bayesian Algorithm that makes it different from Bayesian Theorem.	10
(d)	Differentiate between Conventional Learning and Instance based Learning.	10
(e)	What are the important elements of a Reinforcement Learning Model ?	10

SECTION - C

Attempt Any One of the following

5*10 = 50

Q3	Questions	Marks
(a)	What are the steps involved in designing a learning system.	10
(b)	Explain find-S algorithm using an example.	10
Q4	Questions	Marks
(a)	How does Back Propagation Rule help in Learning in a Neural Network.	10
(b)	Discuss various issues in Decision Tree Learning.	10
Q5	Questions	Marks
(a)	Differentiate between sample error and true error.	10
(b)	Write short notes on Bayesian belief networks.	10
Q6	Questions	Marks
(a)	What is Sample Complexity for Finite Hypothesis Spaces ?	10
(b)	What are the Principles of a Case-based learning?	10
Q7	Questions	Marks
(a)	Explain the working of Q-Learning Algorithm in Reinforcement Learning.	10
(b)	What are the operations involved in Hypothesis Space searching through Genetic algorithm ?	10

