Department of CSE(Cyber Security)

Previous Question Papers:

R18

Code No: 156BN

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech III Year II Semester Examinations, February/March - 2022
MACHINE LEARNING
(Computer science and Engineering)

Time: 3 Hours **Max. Marks: 75**

Answer any five questions
All questions carry equal marks

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1.a)	Discuss about the basic Decision Tree Learning algorithm.	
b)	Briefly explain the need of Inductive Bias in decision Tree Learning.	[7+8]
2.a)	Explain the Find-S: Finding a Maximally Specific Hypothesis in detail.	
b)	Explain the issues in decision tree learning.	[10+5]
3.a)	Present the Backpropagation algorithm for feedforward networks and explain each step in it.	
b)	Explain how to estimate hypothesis accuracy.	[9+6]
4.a)	Define the terms estimation bias and confidence intervals.	
b)	Discuss the central limit theorem for deriving confidence intervals in detail.	
c)	Explain the representation of neural networks.	[5+5+5]
5.a)	Design the Brute Force Bayesian concept learning algorithm and elaborate.	
b)	Explain the Mistake Bound for the Halving Algorithm.	[8+7]
6.a)	Explain the Maximum Likelihood Hypotheses for predicting probabilities.	
b)	Elaborate the Locally Weighted Linear Regression.	[8+7]
7.a)	Explain the Q–learning with suitable example.	
b)	Explain about the hypothesis space search.	[8+7]
8.a)	Discuss about the Explanation-based Learning of Search Control Knowledge.	
b)	Explain how to initialize the hypothesis by using prior knowledge.	[8+7]

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B. Tech III Year II Semester Examinations, February - 2023
MACHINE LEARNING
(Computer Science and Engineering)

Time: 3 Hours **Max. Marks: 75**

Note: i) Question paper consists of Part A, Part B.
ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.
iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART – A

(25 Marks)

1.a)	Define Machine learning.	[2]
b)	Write about inductive bias.	[3]
c)	Define hypothesis.	[2]
d)	Write about sampling theory.	[3]
e)	Define Eager learning.	[2]
f)	What is lazy Learning?	[3]
g)	Define term Genetic.	[2]
h)	Discuss Dynamic Programming.	[3]
i)	Define explanation-based learning.	[2]
j)	Write about control knowledge.	[3]

PART – B

(50 Marks)

2. Which disciplines have their influence on machine learning? Explain with examples. [10]

OR

3.a) Explain the two uses of features in machine learning.
b) Discuss about decision tree representation, in detail. [5+5]

4. Explain in detail about Kernel Perceptron. [10]

OR

5. Discuss in detail about representation of Neural Networks. [10]

6. Describe briefly about k-nearest neighbor algorithm. [10]

OR

7.a) Discuss about Bayesian belief networks.
b) Explain about Bayes theorem. [5+5]

8. Discuss Briefly about Genetic algorithms in detail. [10]

OR

9.a) Discuss about Q–learning, in detail.
b) Explain temporal difference learning in detail. [5+5]

10. Explain about PROLOG-EBG, in detail. [10]

OR

11.a) Discuss about augment search operators.
b) Explain about search control knowledge in detail. [5+5]

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year II Semester Examinations, August/September - 2021

MACHINE LEARNING

(Computer Science and Engineering)

Time: 3 Hours **Max. Marks: 75**

Answer any five questions

All questions carry equal marks

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1.a) Define Well-Posed problem. Illustrate any four examples for Well-Posed problems.
b) What do you mean by Candidate elimination? Explain. [7+8]

2.a) What are the concepts of learning as search? Discuss.
b) Discuss the appropriate problems for decision tree learning. [8+7]

3.a) Contrast the hypothesis space search in ID3 and candidate elimination algorithm.
b) Explain the Back propagation learning algorithm and its limitations. [7+8]

4.a) How a multi layered network learns using a gradient descent algorithm? Discuss.
b) Explain the methods for comparing the accuracy of two hypotheses. [8+7]

5.a) State Bayes theorem. Illustrate Bayes theorem with an example.
b) Describe the mistake bound model of learning. [8+7]

6.a) Explain Gibs algorithm with an example.
b) State and explain the Minimum Description Length Principle. [8+7]

7.a) Discuss about Hypothesis space search in genetic algorithms.
b) Write the basic algorithm for learning sets of First-Order Rules. [8+7]

8.a) Discuss Explanation-Based learning of search control knowledge.
b) Explain the inductive analytical approaches to learning. [8+7]

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year II Semester Examinations, August - 2022

MACHINE LEARNING

(Computer Science and Engineering)

Time: 3 Hours **Max.Marks:75**

Answer any five questions

All questions carry equal marks

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1.a) Which disciplines have their influence on machine learning? Explain with examples.
b) What are the different types of a Machine Learning models? [8+7]

2.a) List the problems that can be solved using machine learning.
b) Discuss the issues in decision tree learning algorithm in detail. [8+7]

3.a) Explain back-propagation algorithm in detail.
b) Explain the following:
i) General consistent hypothesis.
ii) Closed concepts in path through the hypothesis. [7+8]

4.a) Discuss the issues related to neural network learning.
b) Write a detail note on sampling theory. [8+7]

5.a) Describe the Naive Bayesian method of classification. What assumptions does this method make about the ribues and the classification? Give an example where this assumption is to justify.
b) What is the Laplacian correction and why it is necessary? [10+5]

6.a) Write the differences between Eager Learning and Lazy Learning approaches.
b) State Bayes theorem. Illustrate Bayes theorem with an example. [7+8]

7.a) Write the basic algorithm for learning sets of First-Order Rules.
b) Apply inverse resolution in propositional form to the clauses C=A B, C1=A B G. Give at least two possible results for C2. [7+8]

8. What are the differences between inductive learning and analytical learning problems and explain the same with an example. [15]

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