



Machine Learning
(Computer Science and Engineering)

Date: 28-07-2025**Time: 3 Hours.****Max. Marks: 70****Answer ONE Question from each UNIT and each question carries 14 Marks****UNIT-1**

1. A. How do you design a checkers learning problem [7 Marks;CO1;Understand]
- B. Draw the Summary of choices in designing the checkers learning program diagram [7 Marks;CO1;Understand]

(OR)

2. A. List out any 5 applications of the machine learning . [7 Marks;CO1;Understand]
- B. Which disciplines have their influence on machine learning? Explain with examples [7 Marks;CO1;Understand]

UNIT-2

3. Explain hypothesis space and version space in machine learning. [14Marks;CO2;Understand]

(OR)

4. Describe the Find S algorithm, explain its working by taking the enjoy sport concept and training instances given below: [14Marks;CO2;Analyze]

Id	Sky	AirTemp	Humidity	Wind	Water	Forecast	EnjoySport
1	Sunny	Warm	Normal	Strong	Warm	Same	Yes
2	Sunny	Warm	High	Strong	Warm	Same	Yes
3	Rainy	Cold	High	Strong	Warm	Change	No
4	Sunny	Warm	High	Strong	Cool	Change	Yes

UNIT-3

5. What is the minimum description length principle and how does it represent the principle of Occam's razor. [14Marks;CO3;Understand]

(OR)

6. Compare the attribute selection measures Information gain and Gini Index using the example: [14Marks;CO3;Analyze]

Day	Outlook	Temperature	Humidity	Wind	PlayTennis
1	Sunny	hot	High	weak	No
2	sunny	Hot	high	Strong	No
3	Overcast	hot	High	weak	Yes
4	rain	mild	high	weak	Yes
5	rain	cool	Normal	weak	Yes
6	rain	cool	Normal	strong	No
7	Overcast	cool	normal	Strong	Yes
8	sunny	mild	High	weak	No
9	sunny	cool	normal	weak	Yes
10	Rain	mild	Normal	weak	Yes
11	sunny	mild	normal	strong	Yes
12	Overcast	mild	high	strong	Yes
13	overcast	hot	Normal	weak	Yes
14	rain	mild	high	strong	no

UNIT-4

7. Explain the Gradient Search to Maximize Likelihood in a neural Net
[14Marks;CO4;Understand]

(OR)

8. Differentiate between Bayes optimal classifier and the naive Bayes classifier
[14Marks;CO4;Analyse]

UNIT-5

9. List Regression Algorithms. Explain Linear Regression as Regression Mode
[14 Marks;CO5;Understand]

(OR)

10. Define the following terms with respect to K - Nearest Neighbor Learning:
i) Regression ii) Kernel Function. [14 Marks;CO5;Understand]

--The End--