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**B.TECH.
(SEM V) THEORY EXAMINATION 2021-22
MACHINE LEARNING TECHNIQUES**

Time: 3 Hours

Total Marks: 100

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt all questions in brief.

2 x 10 = 20

Qno.	Question	Marks	CO
a.	What is a "Well -posed Learning "problem? Explain with an example.	2	CO1
b.	What is Occam's razor in ML?	2	CO1
c.	What is the role of Inductive Bias in ANN?	2	CO2
d.	What is gradient descent delta rule?	2	CO2
e.	What is Paired t Tests in Hypothesis evaluation?	2	CO3
f.	How do you find the confidence interval for a hypothesis test?	2	CO3
g.	What is sample complexity of a Learning Problem?	2	CO4
h.	Differentiate between Lazy and Eager Learning	2	CO4
i.	What is the problem of crowding in GA	2	CO5
j.	Comparison of purely analytical and purely inductive learning.	2	CO5

SECTION B

2. Attempt any three of the following:

Qno.	Question	Marks	CO
a.	Design the Final design of checkers learning program.	10	CO1
b.	What is Maximum Likelihood and Least Squared Error Hypothesis?	10	CO2
c.	What problem does the EM algorithm solve	10	CO3
d.	Highlight the importance of Case Based Learning	10	CO4
e.	Write short notes on Learning First Order Rules	10	CO5

SECTION C

3. Attempt any one part of the following:

Qno.	Question	Marks	CO														
a.	Explain the "Concept Learning" Task. Giving an example	10	CO1														
b.	Find the maximally general hypothesis and maximally specific hypothesis for the training examples given in the table using the candidate elimination algorithm. Given Training Example:	10	CO1														
<table border="1" style="width: 100%; text-align: center;"> <tr> <td>Sky</td><td>Temp</td><td>Humidity</td><td>wind</td><td>water</td><td>Forecast</td><td>sport</td> </tr> <tr> <td>Sunny</td><td>warm</td><td>Normal</td><td>Strong</td><td>warm</td><td>same</td><td>Yes</td> </tr> </table>				Sky	Temp	Humidity	wind	water	Forecast	sport	Sunny	warm	Normal	Strong	warm	same	Yes
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