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Internal Assessment Test I – Mar. 2019

Sub:	Machine Learning				Sub Code:	15EC834	Branch:	TCE
Date:	07/03/2019	Duration:	90 min's	Max Marks:	50	Sem / Sec:	A	OBE

Answer any FIVE FULL Questions

								MARKS	CO	RBT
1	Discuss the following for the learning task ' A Checker Learning Problem'									
	a) Choosing the training experience							[10]	CO1	L1
	b) Choosing the target function									
	c) Choosing the function approximation algorithm									
2 (a)	What do you mean by a well –posed learning problem? Explain the important features that are required to well –define a learning problem							[5]	CO1	L1
2 (b)	Comment on Issues in Machine Learning							[5]	CO1	L2
3	What is decision tree? Discuss the ID3 algorithm in details.							[10]	CO2	L2
4 (a)	Explain inductive bias through Candidate Elimination Algorithm							[05]	CO1	L2
4 (b)	Explain the inductive bias in decision tree learning.							[05]	CO1	L2
5(a)	Explain the List –Then- Eliminate Algorithm with an example							[05]	CO1	L2
5(b)	List the issues in Decision Tree Learning							[05]	CO2	L2

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- 6 Apply the CANDIDATE-ELIMINATION Algorithm to find the final version space for the following example

Origin	Manufacturer	Color	Decade	Type	ExampleType
Japan	Honda	Blue	1980	Economy	Yes
Japan	Toyota	Green	1970	Sports	No
Japan	Toyota	Blue	1990	Economy	Yes
USA	Chrysler	Red	1980	Economy	No
Japan	Honda	White	1980	Economy	Yes

[10]	CO2	L3
[10]	CO2	L4

- 7 Illustrate the operation of ID3 for the following training examples given in the table below. Here the target attribute is Play Tennis. Draw the complete decision tree

Day	Outlook	Temperature	Humidity	Wind	PlayTennis
D1	Sunny	Hot	High	Weak	No
D2	Sunny	Hot	High	Strong	No
D3	Overcast	Hot	High	Weak	Yes
D4	Rain	Mild	High	Weak	Yes
D5	Rain	Cool	Normal	Weak	Yes
D6	Rain	Cool	Normal	Strong	No
D7	Overcast	Cool	Normal	Strong	Yes
D8	Sunny	Mild	High	Weak	No
D9	Sunny	Cool	Normal	Weak	Yes
D10	Rain	Mild	Normal	Weak	Yes
D11	Sunny	Mild	Normal	Strong	Yes
D12	Overcast	Mild	High	Strong	Yes
D13	Overcast	Hot	Normal	Weak	Yes
D14	Rain	Mild	High	Strong	No

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