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	PART - A $(10 \times 2 = 2)$ Answer ALL Que	20 Marks) stions						Mark:	K– S Leve	, ca)
Define Version Space								2	K1	CO	1
List applications of m	achine learning.							2	K1	CO	1
Define Inductive Leas	rning Hypothesis.							2	K1	CO	2
Outline the effect of r	educed Error pruning in o	decision tree	e alg	goritl	hm.			2	K2	CO	2
State the concept of A	Artificial neural network.							2	K1	CO	3
Sketch the basic neur	al network architecture.							2	K2	CO	3
Define Bayes Theorem	m.							2	K1	CO	4
List the advantages of	f studying Bayesian learn	ing methods	s.					2	K1	CO	4
What is Sequential C	overing Algorithm?							2	K2	CO	6
What is explanation b	based learning?							2	K2	CO	6
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Outline the effect of reduced Error pruning in decision tree alg State the concept of Artificial neural network. Sketch the basic neural network architecture. Define Bayes Theorem. List the advantages of studying Bayesian learning methods. What is Sequential Covering Algorithm? What is explanation based learning?	Reg. No. Question Paper Code 12702 B.E. / B.Tech DEGREE EXAMINATIONS, APRIL Sixth Semester Electronics and Communication Engineerin 20ECEL609 - MACHINE LEARNING TECHNIC Regulations - 2020 tration: 3 Hours PART - A (10 × 2 = 20 Marks) Answer ALL Questions Define Version Space. List applications of machine learning. Define Inductive Learning Hypothesis. Outline the effect of reduced Error pruning in decision tree algorith State the concept of Artificial neural network. Sketch the basic neural network architecture. Define Bayes Theorem. List the advantages of studying Bayesian learning methods. What is Sequential Covering Algorithm? What is explanation based learning?	Reg. 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PART - B (5 × 13 = 65 Marks) Answer ALL Questions

11. a) Discuss the learning system in detail and discuss the perspectives and ¹³ K² CO1 issues in the Machine learning system.

OR

- b) Explain in detail Supervised, Unsupervised and Reinforcement machine ¹³ K² CO1 learning algorithm.
- 12. a) Explain the candidate elimination algorithm obtain the final version space ¹³ K³ CO² for the training example.

	Sky	Humid	Temp	wind	Water	Forecast	Label
1	Sunny	Warm	Normal	Strong	Warm	Same	Y
2	Sunny	Warm	High	Strong	Warm	Same	Y
3	Rainy	Cold	High	Strong	Warm	Change	Ν
4	Sunny	Warm	High	Strong	Cold	Change	Y

OR

Day	Outlook	Temperature	Humidity	Wind	Play Tennis
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

b) With the given example construct the hypothesis set using Find-S ¹³ K³ CO² algorithm

13. a) Describe about perceptron neural network model, delta learning rule ¹³ K2 CO3 and draw the decision surface represented by a two input perceptron.

OR

- b) i) Sketch the Genetic algorithm cycle. Explain each block in detail 6 K2 CO3
 - ii) Explain in detail the Baldwin and Lamarckian theory of Evolution. 7 K2 CO3
- 14. a) i) A patient takes a lab test and the result comes back positive. The test ⁵ K3 CO4 returns a correct positive result in only 98% of the cases in which the disease is actually present, and a correct negative result in only 97% of the cases in which the disease is not present. Furthermore, 0.008 of the entire population have this cancer. Does the patient have cancer, or does he not?
 - ii) Write down the Brute force Bayes Concept Learning. 8 K2 CO4

OR

- b) i) Explain the Bayesian belief network in detail. Describe the conditional 7 K2 CO4 Independence.
- ii) Define Bayes theorem and Explain in detail. 6 K2 CO4
- 15. a) i) Explaining first order learning sets with an example Ancestor(x,y) 6 K2 CO6
 - ii) Discuss in detail Sequential Covering Algorithm for the following 7 K2 CO6 example

	Sky	Humid	Temp	wind	Water	Forecast	Label
1	Sunny	Warm	Normal	Strong	Warm	Same	Y
2	Sunny	Warm	High	Strong	Warm	Same	Y
3	Rainy	Cold	High	Strong	Warm	Change	Ν
4	Sunny	Warm	High	Strong	Cold	Change	Y

b) Explain in detail the (i) First-Order Horn Clauses

(ii) Basic terminology in horn clauses.

PART - C (1 × 15 = 15 Marks)

16. a) Discuss in detail lazy learning of K-NN instance based learning ¹⁵ K2 CO5 algorithm.

OR

b) Discuss in detail the Case based Reasoning with example. 15 K2 CO5