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Reg. No.											

Question Paper Code	11800

B.E./B.Tech. - DEGREE EXAMINATIONS, APRIL/MAY 2023
Seventh Semester
Computer Science and Engineering
(Common to Information Technology)
CS8082 – MACHINE LEARNING
(Regulations 2017)

Duration: 3 Hours   Max. Marks: 100

PART - A (10 × 2 = 20 Marks)
Answer ALL Questions

		Marks, K-Level,CO
1.	List out the applications of machine learning.	2,K1,CO1
2.	Illustrate terms of machine learning.	2,K2,CO1
3.	State the inductive Learning Hypothesis.	2,K2,CO2
4.	Distinguish between crossover and mutation.	2,K2,CO3
5.	What is Minimum Description Length principle?	2,K1,CO4
6.	Summarize the advantages of EM algorithm.	2,K2,CO4
7.	Define the formula for the distance between two instances.	2,K1,CO5
8.	Differentiate Regression, Residual, Kernel function.	2,K2,CO5
9.	Define Q learning algorithms.	2,K1,CO6
10.	Differentiate predicate and function symbols.	2,K2,CO6

PART - B (5 × 13 = 65 Marks)
Answer ALL Questions

11. a) Give Decision trees for the following set of training examples.   13,K3,CO1

Day	Outlook	Temperature	Humidity	Wind	Play Tennis
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

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create   **11800**

1

OR

b) Explain in detail about the useful perspective on machine learning.   *13,K2,CO1*

12. a) (i) Explain in detail the FIND-S: FINDING A MAXIMALLY   *7,K1,CO2*
SPECIFIC HYPOTHESIS.
(ii) Conclude the key properties of FIND-S algorithm.   *6,K1,CO2*

OR

b) Discuss in detail the Candidate–Elimination Algorithm with an   *13,K2,CO2*
example.

13. a) (i) Summarize in detail the relationship between Bayes theorem and   *7,K2,CO4*
Concept learning.
(ii) Write down the Brute force Bayes Concept Learning.   *6,K1,CO4*

OR

b) (i) State and explain EM algorithm.   *7,K2,CO4*
(ii) Examine the detail of probability learning.   *6,K2,CO4*

14. a) Discuss the generic properties of case-based reasoning systems.   *13,K3,CO5*

OR

b) (i) Point out about the Sequential Covering Algorithm.   *7,K2,CO5*
(ii) Explain the Learn one rule on one example.   *6,K2,CO5*

15. a) (i) Generalize what is Reinforcement learning.   *7,K2,CO6*
(ii) Compose Temporal difference learning.   *6,K2,CO6*

OR

b) Discuss about the generation of candidate specializations in FOIL.   *13,K2,CO6*

PART C (1 × 15 = 15 Marks)

16. a) Formulate the models of evolution and learning in Genetic algorithm.   *15,K3,CO3*

OR

b) (i) Summarize the derivation of the Back propagation Algorithm.   *8,K2,CO3*
(ii) Explain Detail about the Gradient Descent algorithm.   *7,K2,CO3*

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create   **11800**

2