CBCS SCHEME

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18MCA53

Fifth Semester MCA Degree Examination, June/July 2023
Machine Learning

Time: 3 hrs. Max. Marks: 100

Note: ***Answer any FIVE full questions, choosing ONE full question from each module.***

,mportant Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

Module-1

1 a. Define a well posed learning problem, Quote some successful applications of machine learning. **(10 Marks)**

b. Define concept and concept learning with eg, explain how the concept learning task determines the hypothesis for given target concept. **(10 Marks)**

OR

2 a. Elaborate the design choices of choosing the training experience and choosing the target function while designing a learning system. **(10 Marks)**

b. Explain find – S algorithm in detail. **(10 Marks)**

Module-2

3 a. List the advantages of decision tree representation, which problems are appropriate for decision tree learning. **(10 Marks)**

b. What are issues in decision tree learning, explain briefly how we can overcome. **(10 Marks)**

OR

4 a. Discuss the ID_3 algorithm for decision tree learning. **(10 Marks)**

b. Discuss inductive bias in decision tree learning. Differentiate between two types of biases why we prefer short hypothesis. **(10 Marks)**

Module-3

5 a. Define perception, explain the concept of single perceptron with a neat diagram. **(10 Marks)**

b. Explain indetail about the problem appropriate for natural network learning and why? **(10 Marks)**

OR

6 a. Explain the back propagation algorithm why is it not likely to be trapped in local minima? **(10 Marks)**

b. Discuss about the perceptron training Rule and the hyadiert descent and Delta Rule. **(10 Marks)**

Module-4

7 a. Summarize the features of Bayesion learning methods. **(10 Marks)**

b. Explain Naïve – Bayes classifiers with an example. **(10 Marks)**

OR

8 a. Explain Bayesian belief N/W and condition independence with example. **(10 Marks)**

b. Explain Brute – force Bayes concept learning with the help of brute – force Map learning algorithm. **(10 Marks)**

Module-5

9 a. Write in detail about the k-nearest neighbor algorithm and its approach for performing classification. **(10 Marks)**

b. What are instance based learning? Explain key features and disadvantages of these methods. **(10 Marks)**

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OR

10 a. Explain sample error, true error, confidence intervals and Q-learning functions. **(10 Marks)**

b. Explain locally weighted linear regression. **(10 Marks)**

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