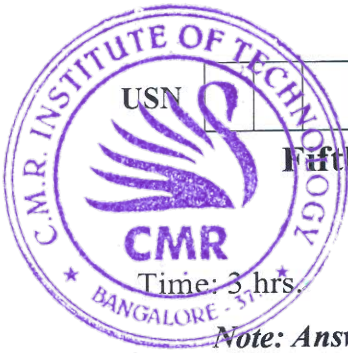


CBCS SCHEME



18MCA53

Fifth Semester MCA Degree Examination, Jan./Feb. 2023 Machine Learning

Max. Marks: 100

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

Module-1

- 1 a. Define Machine Learning. Mention some of the applications of machine learning. (10 Marks)
- b. What are the key properties and complaints of Finds algorithm? (10 Marks)

OR

- 2 a. Write LIST-THEN-ELIMINATE algorithm. (10 Marks)
- b. Write a note on:
(i) Version space (ii) Inductive bias (10 Marks)

Module-2

- 3 a. What is decision tree and decision tree learning? (04 Marks)
- b. Explain decision free with example. (08 Marks)
- c. What are the appropriate problems of decision tree learning? (08 Marks)

OR

- 4 a. Explain the concepts of Entropy and Information gain. (10 Marks)
- b. Describe the ID3 algorithm for decision tree learning with an example. (10 Marks)

Module-3

- 5 a. Define artificial neural network. Explain appropriate problem for neural network learning with its characteristics. (10 Marks)
- b. Explain the concept of perceptron with a neat diagram. (10 Marks)

OR

- 6 a. Briefly explain back propagation algorithm. (10 Marks)
- b. Write a note on gradient Descent and Delta rule. (10 Marks)

Module-4

- 7 a. Define Bayesian theorem. What is the relevance and features of Bayesian theorem. (10 Marks)
- b. Explain maximum Likelihood Hypothesis and least square error hypothesis. (10 Marks)

OR

- 8 a. Explain Brute force Bayes concept learning. (10 Marks)
- b. Explain Naive Bayes classifier with an example. (10 Marks)

Module-5

- 9 a. Define the following term :
i) Sample error ii) Random variable iii) Variance iv) Standard deviation. (10 Marks)
- b. Explain Binomial distribution with an example. (10 Marks)

OR

- 10 a. What are instance based learning? Explain key features and advantages of these methods. (10 Marks)
- b. Describe K-nearest Neighbour learning algorithm for continuous values target function. (10 Marks)

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Important 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.