CBCS SCHEME

USN | | | | | | | | | | |

21CS54

Fifth Semester B.E./B.Tech. Degree Examination, June/July 2026
Artificial Intelligence and Machine Learning

Time: 3 hrs. Max. Marks: 100

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

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.

Module-1

1 a. Define Artificial Intelligence. Explain the functions of Artificial Intelligence. **(10 Marks)**

b. List the Applications of Artificial Intelligence. Explain any one in detail. **(10 Marks)**

OR

2 a. Compare DFS and BFS. **(10 Marks)**

b. List the Search Algorithms. Explain any one in detail. **(10 Marks)**

Module-2

3 a. Define Machine Learning. Explain the different types of Machine Learning. **(08 Marks)**

b. Explain the applications of Machine Learning. **(08 Marks)**

c. Write an algorithm for Recursive Best-First Search. **(04 Marks)**

OR

4 a. Explain the Properties of A* algorithm. **(10 Marks)**

b. Explain the challenges of Machine Learning. **(10 Marks)**

Module-3

5 a. Explain steps of Find-S algorithm in detail. **(10 Marks)**

b. Explain steps of weighted K-nearest neighbor algorithm in Machine Learning with an example. **(10 Marks)**

OR

6 a. List and explain different Validation of Regression method. **(10 Marks)**

b. Explain limitations of Regression. **(10 Marks)**

Module-4

7 a. Define Decision Tree? Explain the advantages and disadvantages of Decision Tree **(10 Marks)**

b. Explain the step ID3 Tree construction in Decision Tree Induction algorithm. **(10 Marks)**

OR

8 a. Explain Naive Bayes Algorithm with an example. **(10 Marks)**

b. Explain Brute Force Bayes algorithm with an example **(10 Marks)**

Module-5

9 a. Define Perceptron? List the components of a perceptron and explain the algorithm of a Perceptron in Artificial Neural Network. **(10 Marks)**

b. Explain the different types of Artificial Neural Network. **(10 Marks)**

OR

10 a. Explain the limitations of Artificial Neural Network. **(05 Marks)**

b. Define Clustering. Write the advantages and disadvantages of clustering. **(05 Marks)**

c. Define Fuzzy clustering. Explain the algorithm of Fuzzy clustering means. **(10 Marks)**

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