



CBCS SCHEME

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.

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)
