

END TERM EXAMINATION

THIRD SEMESTER [MCA] JANUARY-FEBRUARY 2023

Paper Code: MCA203

Subject: Artificial Intelligence
and Machine Learning

Time: 3 Hours

Maximum Marks: 75

Note: Attempt five questions in all including Q.No.1 which is compulsory.
Select one question from each unit.

- Q1 Attempt **any five** from the following: (5x5=25)
- a) Difference between Boosting and Bagging?
 - b) Compare Over fitting and Under fitting?
 - c) Compare Depth First Search with Breath First Search?
 - d) What is difference between informed and uninformed search?
 - e) What is AI? Mention application of AI.
 - f) What is constraint satisfaction Algorithm?
 - g) What is Heuristic Search?
 - h) What are the various types of Neural Network?

UNIT-I

- Q2 a) Explain the following search algorithms with example: (3x2=6)
- i) MEA
 - ii) AO*
- b) Difference between AI, ML and Deep Learning? Give Suitable Example (6.5)
- Q3 a) Define States Spaces in AI? Why they are useful? Write state spaces for any suitable problem? (6)
- b) Discuss various problems in Hill Climbing Algorithm and how they can be prevented? (6.5)

UNIT-II

- Q4 a) What are the various Inferences rule? Explain. (6.5)
- b) Difference between Predicate and Propositional Logic? Provide example (6)
- Q5 a) What are the importance of Knowledge Representation? Explain with Example? (6.5)
- b) Explain the difference between Forward and Backward Reasoning? (6)

UNIT-III

- Q6 a) Difference between Bias and Variance? (6)
- b) What are various types of Machine Learning's Problems? (6.5)
- P.T.O.**

- Q7 a) How Least Square, Total sum of squares and sum of square of residuals are different from each other give example? **(6.5)**
b) What is confusion matrix? Explain with suitable example? **(6)**

UNIT-IV

- Q8 a) Why Dimensionality Reduction is important? Explain with suitable example? **(6)**
b) What is activation function? Why it is important in Machine Learning? **(6.5)**
- Q9 a) Difference between Feed Forward and Back Propagation Algorithm? **(6)**
b) Explain Recommender system? With Suitable example? **(6.5)**
