Code No.: 22CS/CA/CD/PC52 | **R22** | **H.T.No.** | | | **R** | **0** | | | | | | |

CMR INSTITUTE OF TECHNOLOGY: HYDERABAD

UGC AUTONOMOUS

B.Tech: V- Semester End Examinations(Regular)– November– 2025

ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

(CSE,CSE(AI&ML),CSE(DS))

[Time: 3 Hours] **[Max. Marks: 60]**

Note:
1. This question paper contains two parts A and B.
2. Part A is compulsory which carries 10 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have i, ii, iii as sub questions.
4. Illustrate your answers with NEAT sketches wherever necessary.

PART-A **10 X 1M = 10 M**

S.No	*Question*	*Blooms Taxonomy Level*	*CO*
1	Define Artificial Intelligence	L2	1
2	Examine Heuristic Search Techniques	L1	1
3	Classify characteristics of Uncertainty	L1	2
4	Compare Knowledge and Intelligence	L1	2
5	Summarize the role of Expert System	L1	3
6	Define Machine Learning and illustrate its key aspects	L1	3
7	Compare Linear and Non-Linear Models	L1	4
8	Define Logistic Regression	L1	4
9	Distinguish types of Clustering Methods	L1	5
10	How you judge DIANA is top-down approach	L2	5

PART-B **5 X 10M = 50 M**

11.A	Examine State Space Search by using BFS	L4	1
	OR		
11.B	i). Define Means-End Analysis, demonstrate its algorithm ii). Evaluate Means-End Analysis with suitable example	L4	1

12.A	What is Propositional Logic? And evaluate its important applications and limitations	L2	2
	OR		
12.B	Distinguish between Belief Network and Decision Network with example	L2	2
13.A	Define Expert System and explain Typical expert systems	L2	3
	OR		
13.B	Evaluate different types of machine leaning models with example	L2	3
14.A	i). Define Linear Regression and explain its types ii). Evaluate Linear Regression assumptions with example	L3	4
	OR		
14.B	i). Distinguish between Decision trees and Random Forest ii). What is meant by K-Nearest Neighbors algorithm demonstrate its metrics	L3	4
15.A	Explain Self-Organizing Map and how do SOM works compose one example	L2	5
	OR		
15.B	Explain Expectation Maximization algorithm and construct EM algorithm flow chart	L2	5