

KAMARAJ COLLEGE (Autonomous)

Accredited with A+ Grade by NAAC

(Affiliated to Manonmaniam Sundaranar University, Tirunelveli)

THOOTHUKUDI – 628 003

(6 Pages)

Reg. No:

Question Code No : 25001415

Course Code : 24PECA21

PG Degree - End Semester Examinations, November 2025

Second Semester

M.C.A

Artificial Intelligence & Machine Learning

(For those who joined in July 2024 onwards)

Time : 3 Hours

Maximum : 75 Marks

PART – A (10 × 1 = 10 Marks)

Answer ALL Questions

Choose the correct answer

1. List the task domain of artificial intelligence
 - (a) Memory tasks, Formal tasks and Expert tasks.
 - (b) Mundane tasks, Formal tasks and Expert tasks.
 - (c) Mundane, In Formal tasks and Expert tasks.
 - (d) Mundane, Formal tasks and Unexpert tasks.
2. Find the properties of knowledge
 - (a) Hard to character
 - (b) Voluminous

- (c) Constantly changing (d) All the above
3. _____ selects an algorithm, a loop that continually moves in the direction of increasing value.
- (a) Up-Hill Search
 - (b) Hill algorithm
 - (c) Hill-Climbing
 - (d) Reverse-Down-Hill search
4. Identify the four primary classification approaches used for knowledge representation
- (a) Representational, inferential adequacy, inferential efficiency and acquisitional efficiency
 - (b) Representational & inferential efficiency, inferential adequacy and acquisitional
 - (c) Problem reduction, inferential adequacy, frame problem & acquisitional efficiency
 - (d) Problem reduction, inferential adequacy, best first & acquisitional efficiency
5. Select a procedure, which gains its efficiency from the fact that operates on statements that have been converted to a very convenient standard form.
- (a) Function (b) Unification
 - (c) Parent clause (d) Resolution

6. Identify which encode knowledge about how to respond to certain input configurations
- (a) Forward rule
 - (b) Backward rule
 - (c) Unidirectional
 - (d) Bidirectional
7. What is Machine learning?
- (a) The selective acquisition of knowledge through the use of computer programs
 - (b) The selective acquisition of knowledge through the use of manual programs
 - (c) The autonomous acquisition of knowledge through the use of computer programs
 - (d) The autonomous acquisition of knowledge through the use of manual programs
8. What is the key difference between supervised and unsupervised learning?
- (a) Supervised learning requires labeled data, while unsupervised learning does not.
 - (b) Supervised learning predicts labels, while unsupervised learning discovers patterns.
 - (c) Supervised learning is used for classification, while unsupervised learning is used for regression.

13. (a) Illustrate the concept for resolution in propositional logic with algorithm.

(OR)

(b) Differentiate between procedural and declarative knowledge.

14. (a) List the subsets of AI.

(OR)

(b) What is hybrid cloud? What are the importances of the hybrid cloud?

15. (a) Explain training process in machine learning.

(OR)

(b) Summarize an unstructured data sources in data preparation.

PART - C (5 X 8 = 40 Marks)

Answer ALL Questions choosing either (a) or (b).

Answer should not exceed 600 words.

16. (a) Describe heuristic search in production systems.

(OR)

(b) Find a solution for water jug problem using AI technique?

17. (a) Discuss the concepts of Best First Search with suitable algorithm.

(OR)

(b) Summarize the different approaches to knowledge representations.

18. (a) Illustrate the concepts of computable functions and predicates.

(OR)

(b) Examine the concepts of matching.

19. (a) Classify the two types of approaches to advanced analytics with suitable examples.

(OR)

(b) Explain the different categories of machine learning with suitable examples.

20. (a) List out the types of machine learning algorithms in detail.

(OR)

(b) Explain the life cycle of machine learning.