

(7 pages)

Reg. No. :

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M.C.A. (CBCS) DEGREE EXAMINATION,
APRIL 2025.

Second Semester

Computer Applications

Elective III — ARTIFICIAL INTELLIGENCE AND
MACHINE LEARNING

(For those who joined in July 2023 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (15 × 1 = 15 marks)

Answer ALL questions.

Choose the correct answer :

1. Which of the following is the common Language for Artificial Intelligence?
(a) Deep learning
(b) Machine Learning
(c) Python
(d) None of these

2. How many types of recognition are there in AI?
(a) 5 (b) 4
(c) 3 (d) 2
3. What is the state space in AI?
(a) Collection of particular problem states
(b) Collection of some problem states
(c) Collection of all problem states
(d) None of these
4. Representation in mapping are linked in _____ way.
(a) 4 (b) 3
(c) 5 (d) 2
5. How many issues are in knowledge representation?
(a) 2 (b) 5
(c) 4 (d) 3
6. Frames are used to represent _____ information about objects or concepts.
(a) ordered (b) semi structured
(c) structured (d) none of these

7. _____ urgency of achieving global consensus on safe, secure and trustworthy artificial intelligence systems.
- (a) Resolution (b) Systematic
(c) Structured (d) Prepositional
8. Natural deduction is a formal inference system which is said to minors the way in which humans reason.
- (a) probably (b) artificially
(c) dependently (d) naturally
9. _____ is a language with some definite rules which deal with proportions and has no ambiguity in representation.
- (a) Constraint representation
(b) Logical representation
(c) Finite representation
(d) Dimensional representation
10. K-nearest Neighbors (KNN) is classified as _____ type of machine learning algorithm.
- (a) product based algorithm
(b) concurrent based algorithm
(c) instance based algorithm
(d) none of these
11. Procedural Domain Knowledge in a rule-based system, is in the form of?
- (a) product rules
(b) procedural rules
(c) non-procedural rules
(d) none of these
12. When someone programs a robot by moving it physically through the trajectory that they want it to follow is known as
- (a) ML path control
(b) Non-continuous path control
(c) Continuous path control
(d) None of these
13. The atom _____ stands for "true" in LISP.
- (a) q (b) a
(c) o (d) t
14. What was the name of the very first AI programming language?
- (a) ipl (b) Os
(c) LISP (d) none of these
15. _____ or modeling is the method using which we program a computer to exhibit human intelligence.
- (a) pretending (b) simulation
(c) deception (d) imitation

PART B — (5 × 4 = 20 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

16. (a) Explain AI problem.

Or

- (b) Explain the production system.

17. (a) Explain Best-First Problem reduction.

Or

- (b) Explain Constraint Satisfaction.

18. (a) Explain how to represent simple facts in logic.

Or

- (b) Describe natural deduction.

19. (a) What is Machine Learning? Define Big Data.

Or

- (b) Explain the approaches of Machine Learning.

20. (a) Explain the impact of machine learning on applications.

Or

- (b) Explain machine learning cycle in detail.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

21. (a) Explain the various AI techniques.

Or

- (b) Explain search in detail.

22. (a) Briefly explain Hill Climbing.

Or

- (b) Explain the various issues in knowledge representations.

23. (a) Explain how to represent instance and ISA relationships.

Or

- (b) Explain computable functions and predicates.

24. (a) Describe the role of statistics.

Or

(b) Explain how to leverage the power of Machine Learning.

25. (a) Explain data preparation.

Or

(b) Explain machine learning cycle.
