

(FOR THE CANDIDATES ADMITTED

SUBJECT CODE **23 UBC 6E5**

DURING THE ACADEMIC YEAR 2023-24 ONLY)

REG.NO.

N.G.M.COLLEGE (AUTONOMOUS) : POLLACHI
END-OF-SEMESTER EXAMINATIONS : MAY– 2026

B.C.A.

MAXIMUM MARKS: 75

VI SEMESTER

TIME : 3 HOURS

PART – III

ARTIFICIAL INTELLIGENCE AND EXPERT SYSTEMS

SECTION – A

(10 X 1 = 10 MARKS)

ANSWER THE FOLLOWING QUESTIONS.

(K1)

1. The Turing Test is associated with which AI approach?
 - a) Thinking rationally
 - b) Acting rationally
 - c) Thinking humanly
 - d) Acting humanly
2. Which AI technique enables computers to understand human language?
 - a) Pattern Recognition
 - b) Natural Language Processing
 - c) Image Processing
 - d) Robotics
3. Which problem is commonly faced by Hill Climbing Search?
 - a) High memory usage
 - b) Local maxima
 - c) Incomplete search
 - d) High time complexity
4. Which is a key feature of a good expert system?
 - a) Low accuracy
 - b) Explanation capability
 - c) Fixed knowledge
 - d) Manual decision making
5. The perceptron is mainly used for.....
 - a) Clustering
 - b) Regression only
 - c) Binary classification
 - d) Reinforcement tasks

ANSWER THE FOLLOWING IN ONE (OR) TWO SENTENCES.

(K2)

6. Define an intelligent agent.
7. What is pattern recognition?
8. What is the purpose of the Minimax algorithm?
9. What is the role of a knowledge engineer?
10. Define backpropagation.

(CONTD 2)

SECTION – B

(5 X 5 = 25 MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS.
(K3)

11. a) Describe different approaches to Artificial Intelligence.
(OR)
b) Explain the advantages and disadvantages of AI.
12. a) Describe the role of AI in hospitals and medicine.
(OR)
b) Discuss AI applications in pattern recognition and image processing.
13. a) Explain the Generate and Test search strategy.
(OR)
b) Explain AND-OR graphs.
14. a) Explain the role of a domain expert and a knowledge engineer.
(OR)
b) Describe the roles of programmer and project manager in expert system development.
15. a) Explain the types of learning in neural networks.
(OR)
b) List the advantages and limitations of neural networks.

SECTION – C

(5 X 8 = 40 MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS.
(K4 (Or) K5)

16. a) Define Artificial Intelligence and explain its different definitions.
(OR)
b) Explain the importance and applications of Artificial Intelligence.
17. a) Explain the applications of Artificial Intelligence in finance and banking.
(OR)
b) Explain the role of AI in robotics, image processing, and big data mining.
18. a) Describe the Hill Climbing and Simulated Annealing search techniques.
(OR)
b) Explain the Minimax algorithm and its properties.
19. a) Define expert systems and explain their architecture.
(OR)
b) Explain the roles of individuals involved in expert system development.
20. a) Explain the types of supervised, unsupervised, and reinforcement learning with examples.
(OR)
b) Explain the backpropagation algorithm in detail.