Register No.:

1786

October 2026

Time – Two hours
(Maximum Marks: 60)

N.B.
1. Answer all questions under Part-A. Each question carries 1 mark.
2. Answer any 5 questions under Part-B. Each question carries 2 marks.
3. Answer any 3 questions under Part-C. Each question carries 10 marks.

PART – A

1. Artificial Intelligence mainly aims to

   a) Replace electricity

   b) Simulate human intelligence in machines

   c) Design hardware circuits

   d) Improve network cables

2. Which of the following is a component of AI?

   a) Learning

   b) Welding

   c) Routing

   d) Modulation

3. A rational agent always tries to

   a) Increase memory usage

   b) Perform the best possible action

   c) Reduce processor speed

   d) Avoid decision making

4. Which environment is fully observable to an agent?
   a) Partially observable environment
   b) Dynamic environment
   c) Fully observable environment
   d) Stochastic environment

5. Breadth-First Search explores nodes
   a) Depth-wise
   b) Randomly
   c) Level by level
   d) Using heuristics only

6. Which search algorithm uses a heuristic function?
   a) Uniform Cost Search
   b) Depth First Search
   c) A* Search
   d) Bidirectional Search

7. Uniform Cost Search selects the path with
   a) Minimum cumulative cost
   b) Maximum heuristic value
   c) Least depth only
   d) Random choice

8. Bidirectional Search performs search
   a) From start node only
   b) From goal node only
   c) Simultaneously from start and goal nodes
   d) Using local optimization only

9. Propositional Logic deals with
   a) Numerical computation only
   b) Statements that are true or false
   c) Network protocols
   d) Database transactions

10. Ontological Engineering is used for
   a) Designing computer hardware
   b) Structuring and organizing knowledge
   c) Managing network traffic
   d) Creating databases

11. Hill Climbing algorithm is mainly used for
   a) Sorting data
   b) Optimization problems
   c) Network routing
   d) Encryption

12. Genetic Algorithms are inspired by
   a) Database systems
   b) Human communication
   c) Biological evolution
   d) Compiler design

13. The Mini-Max algorithm is mainly used in
   a) Database searching
   b) Game playing
   c) Data compression
   d) Packet routing

14. Alpha-Beta pruning improves Mini-Max by
    a) Increasing memory usage
    b) Eliminating unnecessary branches
    c) Reducing game rules
    d) Expanding all nodes

15. CSP stands for
    a) Constraint Satisfaction Problem
    b) Central Search Process
    c) Common Solution Principle
    d) Computational Search Program

16. Backtracking search is commonly used in
    a) Clustering problems
    b) Constraint Satisfaction Problems
    c) Network security
    d) Image processing

17. Knowledge-Based Agents use
    a) Stored knowledge and reasoning
    b) Hardware switching
    c) Database normalization
    d) Packet filtering

18. Propositional theorem proving is used to
    a) Verify logical conclusions
    b) Compress files
    c) Encrypt messages
    d) Design processors

19. Agent communication mainly helps agents to
    a) Exchange information
    b) Increase hardware speed
    c) Reduce memory
    d) Install applications

20. Model checking in propositional logic is used to
    a) Validate logical models
    b) Optimize databases
    c) Develop hardware circuits
    d) Improve bandwidth

PART – B

21. List any two applications of AI.
22. Write any two primary goals of AI.
23. What is Heuristic Search?
24. Define Propositional Logic.
25. What is Hill Climbing algorithm?
26. Define Constraint Satisfaction Problem (CSP).
27. What is Alpha-Beta search?
28. Define Knowledge-Based Agent.

PART – C

29. Explain the types of Intelligent Agents and their environments.
30. Discuss about the A* Search algorithm with suitable example.
31. Explain about Genetic Algorithm and its working process.
32. Describe about the Mini-Max search algorithm.
33. Explain the architecture for Intelligent Agents and agent communication.
