

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
MCA DEGREE EXAMINATION DECEMBER 2023
(Third Semester)

Branch – COMPUTER APPLICATIONS

ARTIFICIAL INTELLIGENCE

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

ALL questions carry EQUAL marks (5 x 1 = 5)

1. A problem in a search space is defined by one of these states.
 - i) Initial state
 - ii) Last state
 - iii) Intermediate state
 - iv) Control state
2. What is the term used for describing the judgmental or commonsense part of problem solving?
 - i) Heuristic
 - ii) Critical
 - iii) Value based
 - iv) Analytical
3. Where does the Bayes rule can be used?
 - i) Solving queries
 - ii) Increasing complexity
 - iii) Decreasing complexity
 - iv) Answering probabilistic query
4. Neural Networks are complex _____ with many parameters.
 - i) Linear Functions
 - ii) Nonlinear Functions
 - iii) Discrete Functions
 - iv) Exponential Functions
5. Which of the following is an application of Neural Network?
 - i) Sales forecasting
 - ii) Data validation
 - iii) Risk management
 - iv) All of the mentioned

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks (5 x 3 = 15)

6. a Explain the history of artificial intelligence.
OR
b Elaborate the agents interact with environments through sensors and actuators.
7. a Summaries the evaluation functions of imperfect real-time decisions.
OR
b Discuss the basic concept of stochastic games.
8. a Show the difference between the reinforcement learning and supervised learning.
OR
b Illustrate the generalization and overfitting in decision-tree-learning algorithm.
9. a State the N-gram character models.
OR
b Discuss the IR scoring functions in information retrieval.
10. a Show the difference between passive sensors and active sensors.
OR
b Determine the machine learning in robot perception.

Cont...

SECTION -C (30 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

11. a Analyze the heuristic functions in problem-solving.
OR
b Enumerate the types of uninformed search strategies.
12. a Analyze the MiniMax algorithm in optimal decisions in games.
OR
b Compare the forward chaining and backward chaining.
13. a Interpret the basic concept of supervised learning.
OR
b Analyze the decision tree representation of a function.
14. a Determine Hyperlink-Induced Topic Search algorithm.
OR
b Elucidate the formal definition of augmented grammar rules.
15. a Assess the workspace representation of a robot arm with diagram.
OR
b Formulate the agent architecture using reactive control.

Z-Z-Z

END