



Avinashilingam Institute for Home Science and Higher Education for Women
Deemed to be University Estd. u/s 3 of UGC Act 1956, Category 'A' by MHRD (now MoE)
Re-accredited with 'A++' Grade by NAAC. CGPA 3.65/4, category I by UGC
Coimbatore - 641 043, Tamil Nadu, India

Bachelor's Degree Examination – May 2025
IV Semester

Class : II UG (Repeater)
Major : Computer Applications

Time: 3 Hours
Max. Marks: 100

18BCAC17 / 21BCAC17 Artificial Intelligence and Expert Systems

Course Outcomes:

- CO1: Examine various AI search algorithms.
- CO2: Describe the fundamentals of knowledge representation.
- CO3: Analyze search methods appropriate to AI problems.
- CO4: Comprehend various forms of learning.
- CO5: Exhibit working knowledge in PROLOG.

Part A
Choose the Correct Answer

10 x 1 = 10

1. Which of the following is the branch of Artificial Intelligence? CO1 K1
a. Machine Learning b. Cyber forensics
c. Full-Stack Developer d. Network Design
2. Which of the following machine requires input from the humans but can interpret the outputs themselves? CO1 K2
a. Actuators b. Sensor c. Agents d. AI system
3. Which of the following can improve the performance of an AI agent? CO2 K1
a. Perceiving b. Learning c. Observing d. Disjunction
4. _____ number of informed search method are there in Artificial Intelligence. CO2 K2
a. 4 b. 3 c. 2 d. 1
5. The total number of logical symbols in AI are _____ CO3 K3
a. There are 3 logical symbols b. There are 5 logical symbols
c. Number of logical symbols are based on the input d. Logical symbols are not used
6. Which of the following environment is strategic? CO3 K2
a. Rational b: Deterministic c. Partial d. Stochastic
7. What is the name of Artificial Intelligence which allows machines to handle vague information with a deftness that mimics human intuition? CO4 K2
a. Human intelligence b. Boolean logic c. Functional logic d. Fuzzy logic
8. Which of the following is not a benefit of Expert Systems? CO4 K1
a. Availability b. Speed c. Time d. Less Error Rate
9. Prolog comes under _____ CO5 K2
a. Logic Programming b. Procedural Programming
c. OOP d. Functional
10. A program that can execute high-level language programs. CO5 K1
a. Compiler b. Interpreter
c. Sensor d. Circuitry

Part B
Answer ALL questions
Each answer should not exceed 400 words or two pages

5 x 6 = 30

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| 11.a. Examine the history of artificial intelligence. | CO1 K1 |
| (or) | |
| 11.b. Describe the infrastructure for search algorithms. | CO1 K2 |
| 12.a. Illustrate the simulated annealing in hill-climbing algorithm. | CO2 K3 |
| (or) | |
| 12.b. Summarize the basic concept of best first search algorithm. | CO2 K2 |
| 13.a. Explain the free and bound variables with example. | CO3 K3 |
| (or) | |
| 13.b. Distinguish between the contradictions and contingencies. | CO3 K4 |
| 14.a. Evaluate the importance of inductive learning. | CO4 K5 |
| (or) | |
| 14.b. Point out the advantages of reinforcement learning. | CO4 K4 |
| 15.a. Appraise the preliminaries of PROLOG. | CO5 K5 |
| (or) | |
| 15.b. Express the characteristics of an expert system. | CO5 K6 |

Part C
Answer ALL questions
Each answer should not exceed 800 words or four pages

5 x 12 = 60

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| 16.a. Enumerate the structure of agents with diagram. | CO1 K1 |
| (or) | |
| 16.b. Demonstrate the functions of problem-solving agents. | CO1 K2 |
| 17.a. Discover the use of Mean end analysis with example. | CO2 K3 |
| (or) | |
| 17.b. Estimate the implementation of A* search algorithm. | CO2 K2 |
| 18.a. Examine the methodology for converting predicate logic formulae
into prenex normal form | CO3 K3 |
| (or) | |
| 18.b. Compute the need of Herbrand's theorem and resolution. | CO3 K4 |
| 19.a. Assess the purpose of logical formulation of learning. | CO4 K5 |
| (or) | |
| 19.b. Integrate the steps for learning using relevant information. | CO4 K5 |
| 20.a. Conclude the milestones in PROLOG language development. | CO5 K4 |
| (or) | |
| 20.b. Generalize the methods used for experts system life cycle. | CO5 K6 |
