



Avinashilingam Institute for Home Science and Higher Education for Women
 (Deemed to be University under Category 'A' by MHRD, Estd. u/s 3 of UGC Act 1956)
 Re-accredited with 'A+' Grade by NAAC. Recognised by UGC Under Section 12B
 Coimbatore - 641 043, Tamil Nadu, India

Bachelor of Vocation Degree Examination – March 2021
I Semester

Class : I B. Voc
Major : Artificial Intelligence and Machine Learning

Time : 3 Hours
Max. Marks: 100

20VAIC02 Fundamentals of Artificial Intelligence

Part A
Choose the Correct Answer

10 x 1 = 10

1. Which search method takes less memory?
 a. Depth-First b. Breadth-First c. Linear Search d. Optimal search
2. How many types of agents are there in artificial intelligence?
 a. 1 b. 2 c. 3 d. 4
3. Which one of the following is not a variable?
 a. X_yz b. g_23A c. '_Xyz' d. both b & c
4. What is the use of '=' in prolog programming?
 a. unification b. arithmetic evaluation c. reduction d. None of the above
5. A problem in a search space is defined by one of these states.
 a. Initial state b. Last state
 c. Intermediate state d. All the above
6. When will Hill Climbing algorithm terminate?
 a. Stopping criterion met b. Global Min/Max is achieved
 c. No neighbour has higher value d. Goal not is reached
7. A* algorithm is based on
 a. Breadth-First-Search b. Depth-First-Search
 c. Best-First-Search d. Hill climbing
8. What is the evaluation function in A* approach?
 a. Heuristic function
 b. Path cost from start node to current node
 c. Path cost from start node to current node + Heuristic cost
 d. Average of path cost from start node to current node and Heuristic cost
9. Which is not a property of representation of knowledge?
 a. Representational Verification b. Representational Adequacy
 c. Inferential Adequacy d. Inferential Efficiency
10. Which is not Familiar Connectives in First Order Logic?
 a. and b. iff c. or d. not

Part B

5 x 6 = 30

Answer ALL questions

Each answer should not exceed 400 words or two pages

- 11.a. Explain about the various applications of AI.
(or)
- 11.b. What are the various issues involved in design of search programs?
- 12.a. Describe the structure of Prolog program.
(or)
- 12.b. Illustrate the concept of list in prolog using suitable example.
- 13.a. Briefly explain the generate and test method in Heuristic search technique.
(or)
- 13.b. What do you infer from Steepest Ascent Hill Climbing?
- 14.a. Differentiate between A* and AO* algorithm.
(or)
- 14.b. Summarize the concept Means-end analysis.
- 15.a. What is utilization and functionality? Explain.
(or)
- 15.b. Provide the steps involved in building an expert system.

Part C

5 x 12 = 60

Answer ALL questions

Each answer should not exceed 800 words or four pages

- 16.a. Discuss about the future of AI.
(or)
- 16.b. What is depth first search? Explain it with a suitable example.
- 17.a. Write a program in prolog to search an element in a list.
(or)
- 17.b. What is Backtracking? Explain the concept of Backtracking using Prolog.
- 18.a. Summarize the concepts of Heuristic search methods.
(or)
- 18.b. Generalize your opinion about simulated annealing.
- 19.a. Write a program for A* algorithm.
(or)
- 19.b. Point out the concepts in constraint satisfaction.
- 20.a. Write a program for Medical diagnosis using expert system.
(or)
- 20.b. Explain the architecture of an expert system with suitable example.
