

Reg No.: _____

Name: _____

0720MCA188122391

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Second Semester MCA (Two Years) Degree (R,S) Examination May 2024

Course Code: 20MCA188

Course Name: ARTIFICIAL INTELLIGENCE

Max. Marks: 60

Duration: 3 Hours

PART A

Answer all questions, each carries 3 marks.

Marks

- | | | |
|----|--|-----|
| 1 | Discuss any three production system characteristics. | (3) |
| 2 | Solve the crypt-arithmetic puzzle GO + TO = OUT. | (3) |
| 3 | Why searching is important in AI? How searching algorithms are classified? | (3) |
| 4 | What is admissible Heuristics? Give any two examples. | (3) |
| 5 | Represent the following statements using CD structures. | (3) |
| | a. Bill is a programmer | |
| | b. Sam gave Mary a box of candy | |
| | c. Charlie drove the car fast. | |
| 6 | What is the drawback of Minimax algorithm? How it can be overcome? | (3) |
| 7 | What are quantifiers? Explain with an example. | (3) |
| 8 | Explain inference rules in FOPL. | (3) |
| 9 | What is the importance of an expert system? | (3) |
| 10 | Discuss various languages in AI. | (3) |

PART B

Answer any one question from each module. Each question carries 6 marks.

Module I

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|----|---|-----|
| 11 | What is Water Jug problem in AI? How it can be represented using state space representation scheme. Draw the search tree for the problem. | (6) |
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OR

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| 12 | Explain various characteristics of AI problems with appropriate examples. | (6) |
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Module II

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| 13 | Compare Hill climbing and steepest ascend hill climbing search procedures. | (6) |
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OR

- 14 Explain A* Algorithm. What is its advantage over Best First Search algorithm? (6)

Module III

- 15 What is Conceptual dependency theory? What are its components? (6)

OR

- 16 Express the following concepts as semantic network structure with interconnected nodes and labeled arcs: (6)

Company Hamen is a software development company. Three departments within the company are Sales, Administration and Programming. Ansu is the manager of Programming. Deepthi and Vini are Programmers. Deepthi is married to Vipin. Vipin is an editor for journal of Computing. They have three children and live in Elm street. Deepthi wear glasses and is five feet four inches tall.

Module IV

- 17 Explain the various forms of learning. (6)

OR

- 18 What is goal stack planning algorithm? Explain with an example. (6)

Module V

- 19 Mention characteristic features of an expert system and explain its architecture. (6)

OR

- 20 How fuzzy sets are different from crisp sets? Explain following fuzzy operations with examples. (6)

i) Fuzzy Union ii) Fuzzy Intersection iii) Fuzzy Complement
