

PE-5706

[6582]-202

S.E. (Artificial Intelligence & Data Science)
(Computer Science & Engineering(A.I.))
PCC - 202 - AID : Artificial Intelligence
(2024 Pattern) (Semester - III)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Neat diagrams must be drawn wherever necessary.
- 2) Numeric figures in square brackets [] indicate full marks.
- 3) Use of electronic pocket Calculator is allowed.
- 4) Assume suitable data, if necessary.

- Q1) a) What is AI? Explain risk and benefits of AI. [5]
b) Explain utility based agent with the help of neat diagram. [5]
c) List and Explain characteristics of intelligent agent. [4]

OR

- Q2) a) What is Intelligent Agent? Explain structure of agent. [5]
b) Explain "Simple Reflex agent" with the help of Schematic diagram. [5]
c) Define concept of rationality & explain rational agent with example. [4]

- Q3) a) Define Heuristics. Explain the significance of Heuristics Function in the Informed search with suitable example. [7]
b) Explain A* algorithm with example. [7]

OR

- Q4) a) Describe DFS using suitable example. [7]
b) Explain Hill Climbing algorithm. Explain Local maxima, Global maxima and Plateau for an example. [7]

- Q5) a) Explain Alpha - Beta Tree Search and cut off procedure in detail with an example. [6]
b) Define and explain constraints satisfaction problem. [4]
c) Write short note on Features of AI game. [4]

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OR

- Q6) Explain Minimax algorithm in detail. [6]
Explain the concept of backtracking in CSPs. [4]
Explain constraint propagation in detail. [4]

- Q7) Explain Wumpus World environment giving its PEAS description. [7]
Explain FOL. State and explain different inference rules in FOL with suitable example. [4]

OR

- Q8) a) Write an propositional logic for the statement, [7]
i) "All birds fly"
ii) "Every man respect his parents"
iii) "It is raining"
iv) "The sky is blue"
b) Write and explain the steps of knowledge engineering process. [7]

- Q9) a) Discuss AI and its ethical concerns. Explain limitations of AI. [5]
b) Analyze various planning approaches in detail. [5]
c) Write Short note on Generative AI. [4]

OR

- Q10) a) Explain different component of planning system. [5]
b) Explain the analysis of planning approaches. [5]
c) What is classical planning? Explain with example. [4]



Seeq.