

B. TECH. (MINOR) CBCS-2023
B. TECH. (MINOR) Semester-II (Sem-IV Level) ARTIFICIAL INTELLIGENCE & DATA
SCIENCE : SUMMER : 2025
SUBJECT: ARTIFICIAL INTELLIGENCE

Day : Friday
 Date : 06/06/2025

S-29444-2025

Time : 10:00 AM-01:00 PM
 Max. Marks : 60

NB :

1. All questions are COMPULSORY.
2. All Questions carry EQUAL marks.
3. Figures to the right indicate FULL marks for the question.
4. Draw neat labelled diagrams WHEREVER necessary.
5. Assume suitable data, if necessary.

Q. 1 Explain the concept of intelligent agents with examples. Describe the different types of agent architectures (10)

OR

Q. 1 What is the role of structure in agents? Explain different types of agent programs (10)

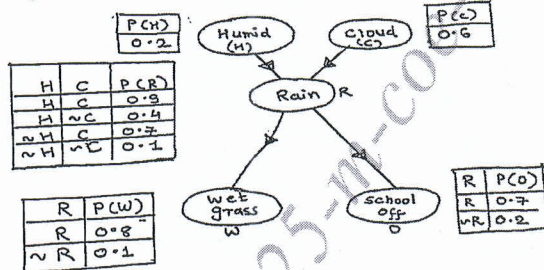
Q. 2 Compare and contrast uninformed and informed search strategies with suitable examples (10)

OR

Q. 2 Discuss informed search strategies with reference to Breadth-First Search (10)

Q. 3 Answer the following using bayesian network theorem (10)

- 1 What is probability that school will be off when there is rain but weather is not humid but cloudy
- 2 What is probability that school will be off when there is rain and weather is humid and cloudy



OR

Q. 3 Explain Wumpus World problem with solution (10)

Q. 4 Write a detailed note on decision trees and ensemble learning techniques (10)

OR

Q. 4 Write short notes on: (i) SVM, (ii) Regression using linear models (10)

Q. 5 Define Constraint Satisfaction Problem (CSP) in the context of AI. Explain how CSPs can be used to solve problems like the Map Coloring or Sudoku puzzle. Mention the role of variables, domains, and constraints in your explanation (10)

OR

- Q. 5 What are partially observable games? How are they handled in AI? (10)
- Q. 6 What is deep learning? Explain the architecture of a deep neural network and its applications. (10)
- OR
- Q. 6 How has Google's DeepMind revolutionized AI in health care? Discuss the role of deep learning and real-time prediction systems (10)

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