CBCS SCHEME

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18MT743

Seventh Semester B.E. Degree Examination, June/July 2024
Artificial Intelligence

Time: 3 hrs. Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

Module-1

1 a. Define an Artificial Intelligence. List and explain the task domain of an Artificial Intelligence. **(10 Marks)**

b. Explain the different characteristics of an AI problem used for analyzing it to choose most appropriate method. **(10 Marks)**

OR

2 a. Explain the history of an AI, scope of an AI, and its benefits. **(10 Marks)**

b. Explain Alan turing machine with example and early work related to Artificial Intelligence fields. **(10 Marks)**

Module-2

3 a. Define production system. Explain the components of production system. **(10 Marks)**

b. Distinguish between breadth first search and depth first search with explanation. **(10 Marks)**

OR

4 a. Solve the given water jug problem,
You are given two jugs, a 4-gallon one and a 3-gallon one. Neither has any measuring markers on it. There is a pump that can be used to fill the jugs with water. How can you get exactly 2-gallons of water into the 4-gallon jug? **(10 Marks)**

b. What is hill climbing? Explain the various hill climbing algorithmic techniques steps. **(10 Marks)**

Module-3

5 a. What is an expert system? Write a neat block diagram of components of an expert system. Explain. **(10 Marks)**

b. Write the neural network structure. Explain and mention their applications. **(10 Marks)**

OR

6 a. What is the need of an expert system, applications and its limitations? **(10 Marks)**

b. Distinguish between forward and backward reasoning, explain with examples. **(10 Marks)**

Module-4

7 a. Describe the ID3 algorithm for decision tree learning and issues related to decision tree. **(10 Marks)**

b. Explain with neat semantic network architecture. **(10 Marks)**

OR

8 a. What is analogical reasoning? Explain with examples. **(10 Marks)**

b. Explain with neat block diagram the non-production system architecture. **(10 Marks)**

Module-5

9 a. Define perceptron. Explain the concept of single perceptron with neat diagram. **(10 Marks)**

b. Describe the CLA representation of NIM game. **(10 Marks)**

OR

10 a. What is machine learning? List and explain the features and applications of machine learning. **(10 Marks)**

b. Explain the checkers playing examples. **(10 Marks)**

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