

Fifth Semester B.E. Degree Examination, Dec.2019/Jan.2020
Artificial Intelligence

Time: 3 hrs.

Max. Marks: 80

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

Module-1

- 1 a. What is Artificial Intelligence? List the task domains of Artificial Intelligence. (05 Marks)
b. Explain Depth-First search algorithm with an example. (05 Marks)
c. Explain Means-Ends analysis with an example. (06 Marks)

OR

- 2 a. A water jug problem states “you are provided with two jugs, first one with 4-gallon capacity and the second one with 3-gallon capacity. Neither have any measuring markers on it. How can you get exactly 2-gallons of water into 4-gallon jug?”
i) Write down the production rules for the above problem.
ii) Write any one solution to the above problem. (08 Marks)
b. Explain problem characteristics with respect to heuristic search. (08 Marks)

Module-2

- 3 a. Explain property inheritance algorithm with example. (06 Marks)
b. Write the algorithm for conversion to clause form. (10 Marks)

OR

- 4 a. Explain forward versus Backward Reasoning with examples. (08 Marks)
b. List the issues in knowledge representation. (04 Marks)
c. Define Horn clause and give the syntactic difference between PROLOG and logic. (04 Marks)

Module-3

- 5 a. Explain Dempster-Shafer theory with example. (06 Marks)
b. Explain Partitioned Semantic Nets with example. (06 Marks)
c. Briefly explain the motivation for fuzzy logic. (04 Marks)

OR

- 6 a. Explain Bayesian network in detail. (08 Marks)
b. Write a note on Dependency-Directed Backtracking. (08 Marks)

Module-4

- 7 a. Define Conceptual Dependency. List the rules of conceptual dependency. (08 Marks)
b. Write the algorithm for minimax (position, depth, players) and explain. (08 Marks)

OR

- 8 a. What is a script? What are the components of a script? Write the Restaurant Script. (10 Marks)
b. Write the algorithm for: (i) Depth first iterative deepening (ii) Iterative deepening – A*. (06 Marks)

Module-5

- 9 a. Explain the different steps in natural language understanding process. (08 Marks)
b. Explain candidate elimination algorithm with example. (08 Marks)

OR

- 10 a. Explain knowledge acquisition. (10 Marks)
b. Explain the classification of spell checking techniques. (06 Marks)