

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATIONS-2022

B.Tech-VIII Semester (ECE)

COURSE CODE: 18B1WEC838

MAX. MARKS: 25

COURSE NAME: ARTIFICIAL INTELLIGENCE TECHNIQUES

COURSE CREDITS: 3

MAX. TIME: 1 Hour 30 Min

Note: All questions are compulsory. Marks are indicated against each question in square brackets.

- Q1. (a) What do you mean by Rationality in Artificial Intelligence? Does a rational agent need to be omniscient? [2]
- (b) Compare and contrast Symbolic Approaches and Connectionist Approaches in Artificial Intelligence with examples. [3]
- Q2. (a) What is a problem-solving agent? Describe the general scheme of problem formulation and finding its solution in the context of the problem-solving agent. [2]
- (b) List and describe the different components of a well defined problem and its solution. [3]
- Q3. What do you mean by heuristic search? With an example give the steps involved in A* algorithm. What are its advantages and limitations? [5]
- Q4. What is Depth First Search? Explain how Depth Limited Search strategy overcomes the limitations of Depth First search. [5]
- Q5. Write a Python program for Greedy Best First Search strategy. Use this program to find the solution for the below tree structure, where A is the initial node and L is the goal node. The value of the heuristic function is given for each node in the figure.

