

**Roll No.**

**Total No. of Pages : 02**

**Total No. of Questions : 09**

**B.Tech. (CSE) (Sem.-6)**  
**ARTIFICIAL INTELLIGENCE**

**Subject Code : BTCS-602-18**

**M.Code : 79250**

**Date of Examination : 16-12-2022**

**Time : 3 Hrs.**

**Max. Marks : 60**

### INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**

## SECTION-A

1. Write briefly :
  - (a) Artificial Intelligence
  - (b) Intelligent agent
  - (c) Best, first search
  - (d) Random search
  - (e) Conditional probability
  - (f) Hidden Markov model
  - (g) Markov decision process
  - (h) Partially observable Markov decision process
  - (i) Passive reinforcement learning
  - (j) Adaptive dynamic programming.

## SECTION-B

2. Differentiate between tree and graph structures.
3. “*A\* Search algorithm is one of the best and popular technique used in path-finding and graph traversals*”. Justify.
4. In a class, there are 70% of the students who like English and 40% of the students who likes English and Mathematics, and then what is the percent of students those who like English also like Mathematics?
5. How does value iteration work in Markov decision process?
6. Discuss the Q-learning algorithm in reinforcement learning.

## SECTION-C

7. Differentiate between depth first and breadth first search.
8. Discuss the various application areas of Artificial Intelligence.
9. How Bayesian networks are represented? Explain.

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**