

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- SEMESTER-VII (NEW) EXAMINATION – WINTER 2020****Subject Code:2174101****Date:25/01/2021****Subject Name:Artificial Intelligence for Robotics****Time:10:30 AM TO 12:30 PM****Total Marks: 56****Instructions:**

1. Attempt any **FOUR** questions out of **EIGHT** questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

| | MARKS |
|--|-----------|
| Q.1 (a) What is AI? Explain in Brief. | 03 |
| (b) What is First order logic. | 04 |
| (c) What is intelligent agent? Explain in detail. | 07 |
| Q.2 (a) What is planning? | 03 |
| (b) Explain goal stack planning in detail. | 04 |
| (c) Explain A* algorithm in detail. | 07 |
| Q.3 (a) What is learning? | 03 |
| (b) What is depth first search? | 04 |
| (c) Explain Kalman filters. | 07 |
| Q.4 (a) Explain Partial order planning. | 03 |
| (b) What do you mean by Learning? List out different type of learning methods. | 04 |
| (c) What is searching? Explain any one searching technique in detail. | 07 |
| Q.5 (a) What is Actuators? | 03 |
| (b) Explain reinforcement learning method. | 04 |
| (c) Explain Dynamic Bayesian Networks | 07 |
| Q.6 (a) What is tree? | 03 |
| (b) What is backward chaining? | 04 |
| (c) Explain Hidden Markov Models. | 07 |
| Q.7 (a) Discuss : Turing Test. | 03 |
| (b) Explain difference between forwards reasoning and backward reasoning. | 04 |
| (c) Explain PEAS with one example? | 07 |
| Q.8 (a) What is state space of a problem? | 03 |
| (b) Discuss with example: Constraint Satisfaction Problem. | 04 |
| (c) What is natural language Processing? explain in detail. | 07 |
