Seat No: _____ Enrollment No: _____

PARUL UNIVERSITY

FACULTY OF ENGINEERING & TECHNOLOGY

B.Tech. Winter 2022 - 23 Examination

Semester: 5 **Date: 07/10/2022**
Subject Code: 203105322 **Time: 10:30 am to 01:00 pm**
Subject Name: Artificial Intelligence **Total Marks: 60**

Instructions:
1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1 Objective Type Questions - (Fill in the blanks, one word answer, MCQ-not more than Five in case of MCQ) (All are compulsory) (Each of one mark) **(15)**

1. Which application or software uses NLP?
   (A) Google Translate
   (B) Microsoft Word
   (C) A and B
   (D) None of the above
2. _____ is a process where successive states of an instance are considered, with the goal to find a goal state with a desired property?
   (A) State space search
   (B) State search
   (C) Heuristic search
   (D) None of the above
3. Agent function will be implemented by _____?
   (A) The agent program
   (B) Sensor
   (C) Actuator
   (D.) None of the above
4. Which of the following includes major tasks of NLP?
   (A) Automatic Summarization
   (B) Discourse Analysis
   (C) Machine Translation
   (D) All of the mentioned

5. If search proceeds from start state towards a goal state, it is a_____
   (A) Backward search
   (B) Forward search
   (C) State Space Search
   (D) None of the above

6. Give any two examples of an actuator.
7. What is the goal of supervised learning?
8. What are the different types of hill climbing?
9. Agent = _____ + _____
10. What is Backward Search?
11. What is Means End Analysis?
12. What do you mean by Fuzzy Logic?
13. Draw ML, DL and AI set diagram?
14. What are the different fuzzy set operations?
15. What is Spell Checking?

Q.2 Answer the following questions. (Attempt any three) **(15)**

A) How can a problem be defined as State Space Search? Explain with a suitable example.
B) Explain Inference Rules.
C) Explain Artificial Neural Network.
D) What are the properties of a good generator?

Q.3 A) Explain steps of Natural Language Processing. **(07)**

B) Explain Architecture of an expert system. What are the examples of expert system? **(08)**

OR

B) Define Types of Reasoning. **(08)**

Q.4 A) Explain different issues in Knowledge Representation. **(07)**

OR

A) Explain Baye's theorem and Bayesian network. **(07)**

B) Explain Best First Search algorithm with a suitable example. **(08)**