

H

Roll No.

TBC-403

B. C. A. (FOURTH SEMESTER)

MID SEMESTER EXAMINATION, 2021

INTRODUCTION TO ARTIFICIAL

INTELLIGENCE

Time : 1½ Hours

Maximum Marks : 50

Note : (i) Answer all the questions by choosing any *one* of the sub-questions.

(ii) Each question carries 10 marks.

1. (a) Define in your own words :

10 Marks (CO1)

(i) Intelligence

(ii) Artificial Intelligence

(iii) Intelligent Agent

(iv) Rational Agent

(v) Logical Reasoning

(2)

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OR

(b) Are reflex actions rational ? Are they intelligent ?
10 Marks (CO2)

2. (a) Differentiate between a goal-based agent and a utility-based agent with suitable diagrams.
10 Marks (CO1)

OR

(b) What do you mean by task environment ? Develop PEAS description of the task environment for :

(i) Robot Soccer Player

(ii) Internet book shopping agent

3. (a) How do you formulate a problem ? Explain why problem formulation must follow goal formulation. 10 Marks (CO3)

OR

(b) Explain the four components of a well-defined problem. What are the four components for an 8-puzzle problem ?

10 Marks (CO3)

4. (a) Differentiate between depth first and breadth first searching strategies. Mention

(3)

the completeness, space complexity, time complexity properties of both the algorithms.
10 Marks (CO3)

OR

(b) Is breadth first search like Best first search. If so, what is the evaluation function used ?
10 Marks (CO3)

5. (a) Explain A* search algorithm in detail.

10 Marks (CO3)

OR

(b) Explain Hill climbing algorithm. What are its drawbacks ?
10 Marks (CO3)

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