



IS ZC444 EC-2R First SEM 2022-2023

Artificial Intelligence (Birla Institute of Technology and Science, Pilani)



Scan to open on Studocu

Birla Institute of Technology & Science, Pilani
Work-Integrated Learning Programmes Division
First Semester 2022-2023

Mid-Semester Test
(EC-2 Regular)

Course No. : IS ZC444
Course Title : ARTIFICIAL INTELLIGENCE
Nature of Exam : Open Book
Weightage : 35%
Duration : 2 Hours
Date of Exam : Friday, 23/09/2022 (AN)

No. of Pages	= 1
No. of Questions	= 7

Note:

1. Please follow all the *Instructions to Candidates* given on the cover page of the answer book.
2. All parts of a question should be answered consecutively. Each answer should start from a fresh page.
3. Assumptions made if any, should be stated clearly at the beginning of your answer.

- Q.1. Explain the following [3 + 2 = 5]
- i. Why it is difficult in designing a systematic test to determine intelligence in a computer?
 - ii. What is knowledge and why it cannot come from one database?
- Q.2. Explain formal task, provide two examples of the same. How would approach to solve these problems. [4]
- Q.3. Explain how would you device a system that thinks like human but does not acts like human. Justify your answer by providing a suitable example. [2 + 1 = 3]
- Q.4. Assume you wish to device a policy to win a hypothetical GUI based game. If the game have three controls to act (say Left/Right/Forward). Let your policy considers two previous actions along with the current precept to decide what to do next. Assuming GUI could send 4 challenges at any moment. Derive how many syntactically different policies are possible in this setting. [5]
- Q.5. What is the formal way of describing a task environment in AI domain? Describe PEAS for an automatic traffic controller agent that to be deployed as a replacement of traffic police. [4]
- Q.6. Describe problem formulation with state space diagram of a water jug problem. The water jug problem is this: “you have 3 jugs of capacity 12L, 8L and 5L water respectively. There is no marking on any of the jug. The jug with the 12L is fulfilled full with the water. You want to make 6L water in the jug with the capacity 8L.” [6]
- Q.7. Derive time and space complexity of uniform cost search and iterative deepening search. [3]
