21CSC3E1CL

No. of Printed Pages : **2**

Sl. No.

M.Sc. III Semester Degree Examination, April/May - 2024

COMPUTER SCIENCE

Artificial Intelligence

(NEP)

Time : 3 Hours Maximum Marks : 70

***Note** : Answer **any five** of the following questions with question **No.1** is **Compulsory**.*

1. (a) Explain how AI systems apply reasoning to solve complex problems. **7**

(b) Discuss the importance of feedback loops in enabling self-correction in AI systems. **7**

2. (a) How have virtual assistant AI applications, such as Siri or Google Assistant, revolutionized daily life tasks ? **7**

(b) Write a note on image based search. **7**

3. (a) What are the advantages and limitations of Generate and Test approach strategy compared to other search algorithms ? **7**

(b) Compare Best First Search (BFS) algorithm and the Hill Climbing algorithm in terms of their search strategies, completeness, optimality, reliance on heuristic information, and memory usage. **7**

4. (a) How does knowledge representation play a crucial role in AI systems, particularly in enabling machines to store, organize, and utilize information effectively ? **7**

(b) Compare Logical Representation and Semantic Network Representation. **7**

5. (a) What is the fundamental syntax elements and data structures used in Prolog programming ? How does Prolog represent data internally, and what are the key syntactical conventions for defining predicates, clauses, and goals in Prolog programs ? **7**

(b) How does Prolog handle input/output operations for characters and structured data ? What built-in predicates and mechanisms do Prolog provide for reading and writing characters, as well as for serializing and deserializing complex data structures ? **7**

P.T.O.

6. (a) List out and explain types of intelligence. **7**

(b) Write an algorithm for Hill Climbing. **7**

7. (a) What are the main challenges and issues faced in knowledge representation ? How do these issues impact the design and implementation of AI systems ? **7**

(b) List out and explain applications of Prolog. **7**

8. Write a short note on the following : **5+5+4**

(a) AI for knowledge acquisition

(b) Applications of AI.

(c) Atoms and Variables in Prolog.

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