Roll No: | | | | | | | | | | | | | |

BTECH
(SEM V) THEORY EXAMINATION 2024-25
ARTIFICIAL INTELLIGENCE

TIME: 3 HRS   **M.MARKS: 70**

Note: Attempt all Sections. In case of any missing data; choose suitably.

SECTION A

1.   **Attempt *all* questions in brief.**   **2 x 07 = 14**

Q no.	Question	CO	Level
a.	Define Artificial Intelligence.	1	2
b.	Define "problem-solving" in AI.	1	2
c.	Define problem-solving in the context of AI.	2	2
d.	What is a Constraint Satisfaction Problem (CSP)?	2	2
e.	What is First Order Predicate Logic (FOPL)?	3	2
f.	Define an intelligent agent.	4	2
g.	Explain the concept of machine translation.	5	2

SECTION B

2.   **Attempt any *three* of the following:**   **07 x 3 = 21**

a.	Compare and contrast different types of Intelligent Agents (Simple Reflex, Model-Based, Goal-Based, and Utility-Based).	1	4
b.	Explain the difference between uninformed and informed search strategies with examples.	2	4
c.	Discuss different types of knowledge representation techniques in AI.	3	2
d.	Describe the negotiation process in multi-agent systems with examples.	4	3
e.	Discuss the process and significance of information retrieval in AI.	5	2

SECTION C

3.   **Attempt any *one* part of the following:**   **07 x 1 = 07**

a.	Explain the evolution of Artificial Intelligence from symbolic AI to modern machine learning.	1	2
b.	Explain the role of AI in enhancing decision-making processes in business applications.	1	2

4.   **Attempt any *one* part of the following:**   **07 x 1 = 07**

a.	Discuss the structure and components of a Constraint Satisfaction Problem (CSP).	2	2
b.	Describe the process of solving a Sudoku puzzle using CSP methods.	2	3

5.   **Attempt any *one* part of the following:**   **07 x 1 = 07**

a.	Compare semantic networks and frames as knowledge representation methods.	3	4
b.	Explain how reasoning systems are designed for decision-making in AI.	3	3

6.   **Attempt any *one* part of the following:**   **07 x 1 = 07**

a.	Explain how argumentation is used for resolving conflicts in multi-agent systems.	4	3
b.	Explain how autonomous agents manage decision-making and execution.	4	3

7.   **Attempt any *one* part of the following:**   **07 x 1 = 07**

a.	Explain the steps involved in extracting structured information from unstructured data.	5	2
b.	Explain how tokenization impacts natural language processing tasks.	5	2