Subject Code: KCS071

PAPER ID-310044

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

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

TIME: 3 HRS **M.MARKS: 100**

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

SECTION A

1. Attempt *all* questions in brief. **2 x 10 = 20**

Q no.	Question	CO	Level
a.	Define artificial intelligence.	1	K1
b.	Name two most common AI problems.	1	K1
c.	Explain problem solving methods.	2	K2.
d.	Recall local search.	2	K1
e.	Explain forward chaining in inference systems.	3	K2
f.	What is ontological engineering?	3	K1
g.	Explain the main components of an architecture for intelligent agents.	4	K2
h.	Evaluate the purpose of negotiation and bargaining in multi-agent systems.	4	K5
i.	Name two applications on AI.	5	K1
j.	Distinguish Information Retrieval from Information Extraction.	5	K4

SECTION B

2. Attempt any *three* of the following: **10 x 3 = 30**

Q no.	Question	CO	Level
a.	Discuss the impact of quantum computing on the future development and capabilities of intelligent agents in AI.	1	K6
b.	How do heuristics contribute to the problem-solving process in AI, and what are some common heuristic techniques used in search algorithms?	2	K1
c.	Examine the concept of unification in prolog and its significance for language inference mechanism.	3	K4
d.	Appraise the reputation management in multi-agent systems, and its importance.	4	K5
e.	Illustrate some real-world applications of artificial intelligence, and the impact on different industries.	5	K2

SECTION C

3. Attempt any *one* part of the following: **10 x 1 = 10**

Q no.	Question	CO	Level
a.	Illustrate the differences between reactive and proactive intelligent agents including applications.	1	K2
b.	Examine the ways the future of Artificial Intelligence can address the current limitations in natural language processing and understanding.	1	K4

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4. Attempt any *one* part of the following: 10 x 1 = 10

Q no.	Question	CO	Level
a.	Discuss the primary problem-solving methods of artificial intelligence, and how do they differ from traditional computational approaches?	2	K6
b.	Examine the working of backtracking search in solving CSPs, along with key advantages and limitations.	2	K1

5. Attempt any *one* part of the following: 10 x 1 = 10

Q no.	Question	CO	Level
a.	Evaluate First Order Predicate Logic (FOPL), and its difference from propositional logic in terms of expressiveness and complexity.	3	K5
b.	How do reasoning systems handle mental events, mental objects, and what are the implications for AI applications?	3	K1

6. Attempt any *one* part of the following: 10 x 1 = 10

Q no.	Question	CO	Level
a.	Explain the role of negotiation and bargaining in multi-agent systems, and how do agents reach agreements?	4	K5
b.	Examine the challenges in establishing trust among agents in a multi-agent system.	4	K4

7. Attempt any *one* part of the following: 10 x 1 = 10

Q no.	Question	CO	Level
a.	Discuss the steps involved in speech recognition and its importance in human-computer interaction.	5	K6
b.	Explain the concept of information extraction and its significance in processing unstructured data.	5	K2

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