PAPER ID-310366

Subject Code: RCS702

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

BTECH
(SEM VII) THEORY EXAMINATION 2023-24
ARTIFICIAL INTELLIGENCE

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

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. 2 x 7 = 14

a.	Explain the History of Artificial Intelligence.
b.	What is heuristic function?
c.	Define Utility theory.
d.	Write the difference between Prepositional logic and predicate logic.
e.	Justify the use of searching in game.
f.	Define Statistical learning model.
g.	Describe optimal problem with suitable example.

SECTION B

2. Attempt any *three* of the following: 7 x 3 = 21

a.	Describe the four categories under which AI is classified with examples.
b.	Describe the concept of adversarial search and its relevance in competitive scenarios.
c.	Explain resolution in predicate logic with suitable example.
d.	Define decision tree? Explain it's with suitable example.
e.	What do you mean by support vector machine (SVM)? Explain in detail with suitable example.

SECTION C

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

a.	Describe briefly the evolution of artificial intelligence.
b.	Explain computer vision in parlance to the artificial intelligence.

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

a.	Define local search algorithms and discuss their application in solving optimization problems.
b.	What is heuristic function? Differentiate between blind search and heuristic search strategies.

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

a.	Differentiate between forward and backward chaining of inference with the help of an example.
b.	Explain resolution in predicate logic with suitable example.

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

a.	What is Reinforcement learning? Differentiate between active and passive reinforcement learning.
b.	How can use Expectation-Maximization (EM Algorithm) in machine learning? Explain with appropriate example.

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

a.	Define PCA. Differentiate between Principal Component Analysis (PCA) and Linear Discriminant Analysis (LDA).
b.	What is Bayesian Theory? Explain the role of prior probability and posterior probability in Bayesian Classification.