PAPER ID-410829

Subject Code: KCA054

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

MCA
(SEM IV) THEORY EXAMINATION 2023-24
MACHINE LEARNING

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

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

SECTION A

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

a.	Name the person who introduced the perceptron.	02
b.	Name the two persons who were considered involved in perceiving the idea of Machine Learning.	02
c.	Describe the term linear regression.	02
d.	Can we use Logistic Regression for classification?	02
e.	Why is Entropy calculated?	02
f.	Which algorithm uses the term Information Gain?	02
g.	Name the AI component used to represent artificial neuron.	02
h.	Whether convolutional neural network based on single layer or multilayer.	02
i.	Name two elements of reinforcement learning.	02
j.	List the two types of reinforcement learning.	02

SECTION B

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

a.	Explain the term Machine learning along with the concepts and terms involved with it.	10
b.	Explain the functioning of Bayes Classification.	10
c.	Illustrate k-Nearest Neighbors (k-NN) algorithm with its advantages and disadvantages.	10
d.	Write notes on Virtual assistant, Recommendation System and Personalized Health Care.	10
e.	Explain Deep Q Learning along with the advantages and challenges associated with it.	10

SECTION C

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

a.	What is an Artificial Neural Network (ANN)? Briefly explain how it works.	10
b.	Briefly explain the difference between Machine Learning and Data Science. Mention one challenge faced in Machine Learning and explain why it's an issue.	10

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

a.	Describe your understanding of Concept Learning. Also describe in brief the algorithms used for Concept learning.	10
b.	Describe the followings in brief: Linear kernel, Polynomial Kernel and Gaussian Kernel	10

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

a.	Describe the steps of ID3 Algorithm.	10
b.	Describe instance-based learning along with its strengths and weaknesses and list any three applications for it.	10

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

a.	Explain the concept of perceptron along with its working with a suitable example.	10
b.	Explain Types of Gradient Descent. Also explain delta Rule and related algorithm.	10

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

a.	Describe any three applications of Reinforcement Learning.	10
b.	Describe components of Reinforcement learning along with its three different models.	10