# PSG COLLEGE OF ARTS & SCIENCE
## (AUTONOMOUS)

### MCA DEGREE EXAMINATION MAY 2022
(Fifth Semester)

Branch – **COMPUTER APPLICATIONS**

## MACHINE LEARNING

Time: Three Hours                                      Maximum: 75 Marks

### SECTION-A (10 Marks)
Answer **ALL** questions
**ALL** questions carry **EQUAL** marks            (10 x 1 = 10)

1. Which learning algorithm is making Computer modification to adapt their action?
   a. Deep
   b. Reinforcement
   c. Machine Learning
   d. Artificial Intelligence

2. How the nerve cells called as?
   a. Brain
   b. Neurons
   c. Membrane
   d. Both a & b

3. Which one is to be included as Input to each neuron?
   a. Value
   b. Edges
   c. Vectors
   d. Bias

4. Which algorithm is used to initialise all weights to small random values?
   a. Radial Basis
   b. Multilayer
   c. RBF
   d. Back propagation

5. How the principal algorithm of boosting named as?
   a. Classifiers
   b. Bagging
   c. Learning
   d. Adaboost

6. Name learning under which the self organizing map is based on
   a. Supervised
   b. Unsupervised
   c. SOM
   d. POM

7. Find the operator which guide a solution to a given problem.
   a. Arithmetic
   b. Logical
   c. Relational
   d. Genetic

8. Which algorithm perform local search around the curse of solution?
   a. Greedy
   b. HillClimbing
   c. Krapsack
   d. Genetic

9. Which statistical method refers for selecting observation from the domain with objective of estimating a population parameter?
   a. Sampling
   b. Proposal Distribution
   c. Markov's Chain
   d. Hidden Markov

10. Which network deals with sequential data in HMMS?
    a. Local Area
    b. Wide Area
    c. Neural
    d. Bayesian

## SECTION - B (25 Marks)
Answer **ALL** questions
**ALL** questions carry **EQUAL** Marks          (5 x 5 = 25)

11. a) Explain Design Learning System.
       OR
    b) Explain Candidate Elimination Algorithm in Machine Learning.

12. a) Explain the Multilayer perceptron Algorithm.
       OR
    b) Discuss about Kernals in Vector machines.

13. a) Explain about Decision trees in machine learning.
       OR
    b) Discuss Gaussian mixture models in detail.

14. a) Explain Independent Component Analysis.
       OR
    b) Explain overview in Reinforcement Learning Cycle.

15. a) Explain Markov Random Fields.
       OR
    b) Discuss on Kalmon Filter in Machine learning.

## SECTION -C (40 Marks)
Answer **ALL** questions
**ALL** questions carry **EQUAL** Marks          (5 x 8 = 40)
Question No.16 is Compulsory

16. Analyse perspective and issues in Machine Learning.

17. a) Enumerate any three examples of Machine Learning Perceptron.
       OR
    b) Elucidate the Radial Basis function network in detail.

18. a) Describe the Nearest neighbour method in Machine Learning.
       OR
    b) Elaborate the K-means Algorithm.

19. a) Enumerate Principal Component Analyses in Dimensionality Reduction.
       OR
    b) Justify Genetic Algorithm and its uses in detail.

20. a) Describe Markov's chains Monte Carlo methods in detail.
       OR
    b) Elaborate Hidden Markov models in Machine Learning.

Z-Z-Z                                    END