PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2025
(Sixth Semester)

Branch – **COMPUTER SCIENCE**

ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

Time: Three Hours Maximum: 50 Marks

SECTION-A (5 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** marks (5 x 1 = 5)

1 Which search strategy is also called as blind search?
(i) Informed search (ii) Uninformed search
(iii) Simple reflex search (iv) All of the above

2 Which is used to improve the performance of heuristic search?
(i) Quality of nodes (ii) Simple form of nodes
(iii) Quality of heuristic function (iv) None of the above

3 Which value is assigned to alpha and beta in the alpha - beta pruning?
(i) Alpha = max (ii) Beta = min
(iii) Beta = max (iv) Both Alpha=max & Beta=min

4 Which type of machine learning algorithm falls under the category of "unsupervised learning"?
(i) K-means Clustering (ii) Linear Regression
(iii) Decision Trees (iv) Random Forest

5 Which algorithm is commonly used to train Multi Layer perceptron?
(i) Linear Regression (ii) Back Propagation
(iii) K-Means Clustering (iv) Naive Bayes

SECTION - B (15 Marks)
Answer **ALL** Questions
ALL Questions Carry **EQUAL** Marks (5 x 3 = 15)

6 a) Explain about Structure of Agents.
OR
b) Describe about Uniform Cost Search with an example.

7 a) Explain about Greedy Breadth First Search with suitable example.
OR
b) Outline the concept of Simulated Annealing.

8 a) Explain about Optimization algorithms.
OR
b) Analyze the concept of Mini-max Algorithm with an example.

9 a) Compare Artificial Intelligence and Machine Learning.
OR
b) Describe about Classification and Regression with an example.

10 a) Explain about Naive Bayes Classifier with suitable example.
OR
b) Describe about the Multi Layer Perceptron.

Cont...

SECTION -C (30 Marks)

Answer **ALL** questions
ALL questions carry **EQUAL** Marks (5 x 6 = 30)

11 a) Elucidate about the Evolution of Artificial Intelligence.

OR

b) Differentiate between Breadth First Search and Depth First Search.

12 a) Discuss about A* Search Algorithm with an example.

OR

b) Enumerate about the 4 Queen Problem with suitable example.

13 a) Elucidate about Genetic Algorithms with an example.

OR

b) Discuss about the Alpha-Beta Pruning Algorithm with an example.

14 a) Categorize about the Categories of Machine Learning.

OR

b) Enumerate the concept of Conditional Probability Distributions.

15 a) Elucidate about K-Nearest Neighbour Classifier with an example.

OR

b) Summarize about the Hidden Markov Model with suitable example.

Z-Z-Z END