

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION MAY 2022
(Eighth Semester)

Branch – SOFTWARE SYSTEMS
(Five year Integrated)

DISCIPLINE SPECIFIC ELECTIVE – III – 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. _____ is the common classes of problems in Machine learning.
(i) Regression (ii) Classification
(iii) Clustering (iv) All of these
2. _____ is one of the disadvantages in decision trees.
(i) Decision trees are robust to outliers (ii) Factor Analysis
(iii) Decision trees are prone to over fit (iv) All of these
3. The total types of the layer in radial basis function neural networks is _____.
(i) 1 (ii) 2
(iii) 3 (iv) 4
4. Neural Networks are complex _____ functions with many parameters.
(i) Linear (ii) Non-linear
(iii) Discrete (iv) Exponentials
5. A statement whose validity is tested on the basis of a sample is called _____.
hypothesis.
(i) Null (ii) Statistical
(iii) Simple (iv) Composite
6. If the null hypothesis is false, then _____ hypothesis is accepted.
(i) Null (ii) Positive
(iii) Negative (iv) Composite
7. The most significant phase in genetic algorithm is _____.
(i) Mutation (ii) Selection
(iii) Fitness function (iv) Crossover
8. Genetic Algorithms belong to _____.
(i) Artificial Intelligence (ii) Optimization
(iii) Complete Enumeration (iv) Non-Computer based solutions
9. _____ Learning is all about making decisions sequentially.
(i) Supervised (ii) Unsupervised
(iii) Reinforcement (iv) All of these
10. Reinforcement learning is _____ learning.
(i) Supervised (ii) Unsupervised
(iii) Award based (iv) None of these

SECTION - B (25 Marks)

Answer ALL questions
ALL questions carry EQUAL Marks (5 x 5 = 25)

11. a) Explain the steps to design a learning system.
OR
b) Explain the working and usage of Decision Tree Learning Algorithm.
12. a) List and explain the appropriate problems in Neural Networks Learning.
OR
b) Explain generalization, overfitting and stopping criterion.
13. a) How do you estimate Hypotheses Accuracy?
OR
b) Explain how confidence intervals are useful?
14. a) How do you represent hypotheses in Genetic Algorithms?
OR
b) Explain the Baldwin effect.
15. a) Explain the learning task in Reinforcement learning.
OR
b) Explain the Convergence Experimentation strategies.

SECTION-C (40 MARKS)

Answer ALL questions
ALL Questions Carries EQUAL Marks (5 X 8 = 40)
Question No. 16 is compulsory

16. Explain the perspective and issues in Machine Learning.
17. a) Discuss in detail about Perceptrons.
OR
b) Discuss in detail about back propagation algorithm.
18. a) Explain how do you calculate the binomial proportion and estimate the errors.
OR
b) Explain the various perspectives to compare machine learning algorithms.
19. a) Explain Genetic programming in detail.
OR
b) Explain the parallelizing genetic algorithms.
20. a) Discuss in detail about Q-Learning.
OR
b) Explain in detail about Dynamic programming.

Z-Z-Z END