

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION MAY 2023
(Second Semester)

Branch – COMPUTER SCIENCE

MAJOR ELECTIVE COURSE I –
MACHINE LEARNING AND APPLICATIONS / 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 The term machine learning was coined in which year?
(i) 1958 (ii) 1959 (iii) 1960 (iv) 1961
- 2 Identify for what type of problems are decision tree is most suitable?
(i) Are most suitable for tabular data (ii) The outputs are discrete
(iii) Explanations for decisions are required (iv) All the Above
- 3 Sentiment Analysis is an example of 1.Regression 2.Classification 3.Clustering
4.Reinforcement. Learning Options
(i) 1 Only (ii) 1 and 2 (iii) 1 and 3 (iv) 1, 2, 3 and 4
- 4 Reinforcement learning is a ____
(i) Prediction results-based learning technique
(ii) Feedback results -based learning technique
(iii) History results-based learning technique
(iv) Parameter selection-based learning technique
- 5 Which of the following is correct use of cross validation?
(i) Selecting variables to include in a model
(ii) Comparing predictors
(iii) Selecting parameters in prediction function
(iv) All of the mentioned

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks (5 x 3 = 15)

- 6 a. Explain about Noise in Supervised Learning.
OR
b. Illustrate the use of Vapnik-Chervonenkis dimension in machine learning.
- 7 a. Discuss about Association Rules.
OR
b. What are univariate trees? What is the difference between univariate and multivariate trees?
- 8 a. Explain the working of K-means clustering.
OR
b. Analyze about Discrete Markov Processes with an example.
- 9 a. State about single state case reinforcement learning.
OR
b. Discuss about error-correcting output codes in machine learning.
- 10 a. Illustrate about Response Surface Design.
OR
b. Explain 5x2 Cross in machine learning.

Cont...

SECTION -C (30 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

- 11 a. Appraise about Machine learning and its applications
OR
b. Interpret about the Models Selection process in Machine Learning.
- 12 a. Assess the classification of Bayesian Decision Theory.
OR
b. Elucidate about the Multivariate Trees and its classification.
- 13 a. Justify the use of hierarchical clustering in real life.
OR
b. Enumerate about the HMM and its various models with examples.
- 14 a. Elucidate the elements of reinforcement learning.
OR
b. Enumerate about the generating diverse learners model.
- 15 a. Elucidate the steps of machine learning experimental design.
OR
b. Interpret the following:
a) Replication b) Boot strapping

Z-Z-Z

END