KAMARAJ COLLEGE (Autonomous)

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(Affiliated to Manonmaniam Sundaranar University, Tirunelveli)

(4 Pages) **Reg. No:……**

Question Code: 26E03210 **Course Code : 25PMAI21**

PG Degree - End Semester Examinations, April 2026

Second Semester

M.Sc., COMPUTER SCIENCE WITH AI

Machine Learning

(For those who joined in June 2025 onwards)

Time : 3 Hours **Maximum : 75 Marks**

PART – A (10 × 1 = 10 Marks)

Answer ALL Questions

Choose the correct answer :

CO:1 K:2 1. In Machine Learning, what does a feature (x) represent?

(a) An input variable used to make predictions (b) The error in the model

(c) Database users (d) The learning algorithm

CO:1 K:2 2. What does a training dataset contain?

(a) Only output values (b) Input features and their corresponding output labels

(c) Only input features (d) An input variable used to make predictions

CO:2 K:2 3. Which function is used in logistic regression to map values between 0 and 1?

(a) Linear function (b) Step function

(c) Sigmoid function (d) ReLU function

CO:2 K:2 4. In binary logistic regression, how many classes are there?

(a) Four (b) Three

(c) One (d) Two

CO:3 K:2 5. What is the main purpose of a learning curve?

(a) To show model performance versus training set size

(b) Column-family store

(c) To compare different algorithms

(d) Key–Value store

CO:3 K:1 6. What does a validation curve plot?

(a) Accuracy versus time (b) Model performance versus a hyperparameter value

(c) Key–Value (d) Document value

CO:4 K:1 7. What does Bagging stand for in Machine Learning?

(a) Balanced Grouping (b) Binary Aggregation

(c) Bootstrap Aggregating (d) Binary databases

CO:4 K:1 8. How are training datasets created in bagging?

(a) Sharding (b) By using validation data

(c) MapReduce (d) By sampling with replacement

CO:5 K:1 9. Which architectural pattern does Django follow?

(a) MVT (b) MVC

(c) MVP (d) MVCC

CO:5 K:1 10. Which command is used to create a new Django project?

(a) django newproject (b) django-admin startproject

(c) django-admin runserver (d) RegionServer

PART – B (5 X 5 = 25 Marks)

Answer ALL Questions choosing either (a) or (b).

Answer should not exceed 250 words.

CO:1 K:4 11. (a) Discover the basic terminology and notations of machine learning.

(OR)

(b) Inspect building intelligent systems to transform data into knowledge.

CO:2 K:4 12. (a) Distinguish between Modeling class probabilities and logistic regression.

(OR)

(b) Survey the ways of partitioning a dataset into separate training and test datasets.

CO:3 K:3 13. (a) Identify the debugging algorithms with learning and validation curves.

(OR)

(b) Organize the potential challenges of k-fold cross-validation.

CO:4 K:4 14. (a) Analyze the dimensions and components of bagging in machine learning.

(OR)

(b) Classify the various features of least squares linear regression.

CO:5 K:3 15. (a) How do you make use of query sets and managers in Django?

(OR)

(b) Identify the retrieving objects in Django.

PART – C (5 X 8 = 40 Marks)

Answer ALL Questions choosing either (a) or (b).
Answer should not exceed 600 words.

CO:1 K:4 16. (a) Analyze the simple machine learning algorithms for Classification with example.

(OR)

(b) Examine adaptive linear neurons and the convergence of learning in machine learning.

CO:2 K:5 17. (a) Estimate the importance of machine learning classifiers using scikit-learn.

(OR)

(b) Explain the various types of classification algorithm in machine learning.

CO:3 K:6 18. (a) Discuss kernel principal component analysis for nonlinear mappings.

(OR)

(b) Elaborate the various types of unsupervised dimensionality reduction in machine learning.

CO:4 K:5 19. (a) Assess the performance of linear regression models.

(OR)

(b) Determine the regularized methods for regression in machine learning.

CO:5 K:6 20. (a) Discuss the architecture of project creation in Django.

(OR)

(b) Elaborate on data schema in Django.