

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

**BSc DEGREE EXAMINATION MAY 2026
(Fifth Semester)**

Branch - **COMPUTER SCIENCE WITH DATA ANALYTICS**

MACHINE LEARNING

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** marks

(10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	Which is not an application of Machine Learning? a) Spam filtering b) Speech recognition c) Database indexing d) Image classification	K1	CO1
	2	Data preprocessing mainly involves _____ a) Reducing programming effort b) Improving data quality c) Ignoring missing values d) Changing algorithms	K2	CO1
2	3	Which is an example of a classification model? a) Decision Tree b) K-Means c) PCA d) Apriori	K1	CO2
	4	High variance in machine learning indicates ____ a) Underfitting b) Overfitting c) Perfect fitting d) Noisy dataset	K2	CO2
3	5	Which of the following is NOT a supervised learning task? a) Classification b) Regression c) Clustering d) Decision Trees	K1	CO3
	6	Maximum Likelihood Estimation (MLE) is used in _____ a) Logistic regression b) Decision Trees c) Random Forest d) Clustering	K2	CO3
4	7	The main element of neural networks inspired by biology is _____ a) Neuron b) DNA c) Chromosome d) Synapse	K1	CO4
	8	Representation learning in neural networks refers to _____ a) Automatic feature extraction b) Manual feature selection c) Data preprocessing only d) Clustering data points	K2	CO4
5	9	Reinforcement learning is based on: a) Rewards and penalties b) Data clustering c) Regression fitting d) Supervised labeling	K1	CO5
	10	The main goal of reinforcement learning is to ____ a) Maximize cumulative reward b) Minimize distance c) Reduce features d) Increase bias	K2	CO5

Cont ...

SECTION - B (35 Marks)Answer **ALL** questions**ALL** questions carry **EQUAL** Marks (5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	Elucidate the state-of-the-art languages and tools in machine learning.	K3	CO1
		(OR)		
	11.b.	Determine the general issues in machine learning.		
2	12.a.	Explain the predictive models for supervised learning.	K3	CO2
		(OR)		
	12.b.	Illustrate the use of K-fold cross-validation method.		
3	13.a.	Highlight the assumptions in regression analysis.	K6	CO3
		(OR)		
	13.b.	Evaluate the maximum likelihood estimation with example.		
4	14.a.	Discuss the clustering as a machine learning task.	K3	CO4
		(OR)		
	14.b.	Assume the major components of artificial neuron.		
5	15.a.	State the various forms of clustering.	K6	CO5
		(OR)		
	15.b.	Discover the heuristics for active learning.		

SECTION - C (30 Marks)Answer **ANY THREE** questions**ALL** questions carry **EQUAL** Marks (3 × 10 = 30)

Module No.	Question No.	Question	K Level	CO
1	16	Determine the different types of data in machine learning.	K3	CO1
2	17	Elucidate the underfitting and overfitting of model representation and interpretability.	K3	CO2
3	18	Assess the steps for classification learning with diagram.	K6	CO3
4	19	Examine the partitioning-based clustering in k-means and k-medoid.	K3	CO4
5	20	Demonstrate the need of association rule learning algorithm.	K6	CO5

Z-Z-Z

END