

PART - A (10×2 = 20 marks)

01.	KL1	What are the objectives of Machine Learning?	CO1
02.	KL1	List few application of Machine Learning.	CO1
03.	KL2	Mention the merits of Bayesian linear regression.	CO2
04.	KL1	Distinguish between Random Forest and Support Vector Machine.	CO2
05.	KL1	Identify the challenges of the Clustering algorithm.	CO3
06.	KL1	Define Expectation Maximization.	CO3
07.	KL2	Differentiate between Single layer and Multilayer perceptron.	CO4
08.	KL1	What is a hyperparameter? List few hyperparameter?	CO4
09.	KL2	List the various phases of the machine learning life cycle.	CO5
10.	KL1	How do you evaluate a classification algorithm?	CO5

PART - B (5×13 = 65 marks)

11.	a.	KL3	Elucidate the Vaphik-Chervonenkis(VC) dimension with suitable examples.	13	CO1
(OR)					
11.	b.	KL3	Discuss the following i. Inductive Bias and Bias variance trade-off.	6	CO1

			ii.Probably Approximately correct(PAC) Learning	7	
12.	a.	KL5	Explain the process of constructing CART(classification And Regression Tree)with a suitable example.	13	CO2
(OR)					
12.	b.	KL3	Write Short notes on i.Regression and Correlation. ii.Limitation of Regression Model.	6 7	CO2

13.	a.	KL4	Discuss about the weighted K-nearest Neighbor algorithm with a suitable sketch.	13	CO3
(OR)					
13.	b.	KL4	Compare Bagging, Boosting and Stacking ensemble methods.	13	CO3

14.	a.	KL3	How does backpropagation work with activation functions like ReLU or Sigmoid, and what challenges might arise from each?	13	CO4
(OR)					
14.	b.	KL4	Illustrate the following. i.Batch Normalization ii.Dropout iii.Regularization	5 4 4	CO4

15.	a.	KL4	With neat diagram explain about K-fold cross validation technique.	13	CO5
(OR)					
15.	b.	KL3	Mention the various methods of measuring Classifier Performance with suitable examples.	13	CO5

PART - C (1×15 = 15 marks)

16.	a.	KL6	Explain the principle of the gradient descent algorithm. Accompany your explanation with a diagram.	15	CO2
(OR)					
16.	b.	KL5	Draw the architecture of a Single Layer Perceptron(SLP) and explain its operation. Mention its advantages and disadvantages.	15	CO4