Department of CSE (AI&ML)

B. Tech. Mid Question Bank (R22 Regulation)

Academic Year: 2024-2025 Sem: V

Subject Name: Machine Learning [22AM502PC]

Faculty Name: Parvathi Devi .G

PART-A

MID-I Questions					
Q.No	**Questions**	**Marks**	**BL**	**CO**	**Unit No**
1	What is a Machine Learning?	2M	L1	CO1	I
2	What is Linear Discriminates?	2M	L1	CO1	I
3	What is Find-Specific Hypothesis algorithm ?	2M	L1	CO1	I
4	What is Linear Separability?	2M	L1	CO1	I
5	What is Concept learning task?	2M	L1	CO1	I
6	What are the Issues in ML?	2M	L1	CO1	I
7	What is multilayer network?	2M	L1	CO2	II
8	What is radial basis function?	2M	L1	CO2	II
9	What is spline?	2M	L1	CO2	II
10	Define Perceptron and its use in neural network learning.	2M	L1	CO2	II
11	What are the basics of sampling theory in the context of hypothesis evaluation?	2M	L1	CO2	II
12	What is interpolation?	2M	L1	CO2	II
13	What is Decision Tree?	2M	L1	CO3	III
14	What is Classification?	2M	L1	CO3	III
15	What is Regression?	2M	L1	CO3	III
MID-II Questions					
16	What is Boosting?	2M	L1	CO3	III
17	What is Bagging?	2M	L1	CO3	III
18	What is Classifier?	2M	L1	CO3	III
19	Define LDA.	2M	L1	CO4	IV
20	Write any two differences of PCA and ALDA.	2M	L1	CO4	IV
21	What is data reduction in machine learning?	2M	L1	CO4	IV
22	What is Evolutionary learning?	2M	L1	CO4	IV
23	What is genetic offspring?	2M	L1	CO4	IV
24	What are genetic Operators?	2M	L1	CO4	IV
25	What is Reinforcement learning?	2M	L1	CO5	V
26	What is sampling in machine learning	2M	L1	CO5	V
27	What is Bayesian network?	2M	L1	CO5	V
28	What is proposal distribution?	2M	L1	CO5	V
29	What are the applications of Markov random fields?	2M	L1	CO5	V
30	What is MDP in machine learning?	2M	L1	CO5	V

PART-B

MID-I Questions					
Q.No	**Questions**	**Marks**	**BL**	**CO**	**Unit No**
1	Explain the Types of Machine Learning.	4	L2	CO1	I
2	Discuss the candidate elimination algorithm and its role in maintaining version spaces.	4	L2	CO1	I
3	What is the Find-S algorithm and how does it work in concept learning	4	L2	CO1	I
4	Evaluate the effectiveness of the candidate elimination algorithm in concept learning.	4	L2	CO1	I
5	How does the Find-S algorithm find a maximally specific hypothesis? Illustrate with an example.	4	L2	CO1	I
6	Discuss the major perspectives and issues in machine learning.	4	L2	CO1	I
7	Explain the Linear Regression.	8	L2	CO1	I
8	Explain the Design Learning System.	8	L2	CO1	I
9	Explain the Concept Learning.	8	L2	CO1	I
10	Explain the Multi-layer perceptron.	4	L2	CO2	II
11	Explain the back-propagation algorithm in detail and its significance in neural networks.	4	L2	CO2	II
12	Describe the process of face recognition using neural networks as an illustrative example.	4	L3	CO2	II
13	Deriving the back-propagation algorithm .	4	L2	CO2	II
14	Explain the RBF Network.	4	L2	CO2	II
15	Explain the Support Vector Machine.	4	L2	CO2	II
16	How to Derive Back-Propagation?	8	L2	CO2	II
17	Explain the Multi-layer perceptron with an example.	8	L3	CO2	II
18	What is the curse of dimensionality issues in ML?	8	L3	CO2	II
19	Explain the Decision Tree Algorithm.	4	L2	CO3	III
20	Explain the CART Algorithm.	4	L2	CO3	III
21	What are the appropriate problems for decision tree learning?	4	L2	CO3	III
MID-II Questions					
22	What is Hypothesis in decision tree learning?	4	L2	CO3	III
23	Describe different ways to combine Classifiers.	4	L2	CO3	III
24	Explain Gaussian mixture models.	4	L2	CO3	III
25	Explain the Issues in Decision Tree Algorithm.	4	L3	CO3	III
26	Explain the Nearest Neighbour Methods.	4	L2	CO3	III
27	Explain the K-means Algorithm.	4	L2	CO3	III
28	Describe the basic concept of Genetic Algorithms and their motivation.	4	L2	CO4	IV
29	Explain the Workflow of a Simple Genetic Algorithm.	4	L2	CO4	IV
30	Explain Linear Discriminate Analysis.	4	L2	CO4	IV
31	Explain Principal Component Analysis.	4	L2	CO4	IV

32	Describe Factor Analysis in detail.	4	L2	CO4	IV
33	Describe Independent Component Analysis.	4	L2	CO4	IV
34	What is the difference between PCA and ICA?	8	L2	CO4	IV
35	Explain locally linear embedding in detail.	8	L2	CO4	IV
36	Explain ISOMAP and Least Squares Optimization.	8	L2	CO4	IV
37	Explain Sampling method in Machine Learning.	4	L2	CO5	V
38	Describe Proposal Distribution in detail.	4	L2	CO5	V
39	Explain Markov chain Monte Carlo methods in Machine Learning.	4	L2	CO5	V
40	What is the Markov chain method for sampling in Monte Carlo?	4	L2	CO5	V
41	Explain Bayesian Networks.	4	L2	CO5	V
42	What are hidden markov models in machine learning?	4	L2	CO5	V
43	What is the overview of reinforcement learning algorithms?	8	L2	CO5	V
44	Which models are examples of graphical models ? explain in detail.	8	L3	CO5	V
45	Explain the graphical Modelling techniques.	8	L2	CO5	V