Machine Learning - Unit 2 & 3 Answer Key

Unit 2 - Multiple Choice Questions with Answers

Q: The primary function of the backpropagation algorithm is to _____.
Correct Answer: A. Train neural networks

Q: The primary function of a perceptron is to _____.
Correct Answer: A. Classify data

Q: A multilayer neural network consists of _____.
Correct Answer: C. Multiple layers

Q: In the context of neural networks, activation functions are used to _____.
Correct Answer: B. Introduce non-linearity

Q: Big Data is that which
Correct Answer: B. is huge in volume, yet growing exponentially with time

Q: Which neural network model was developed by Frank Rosenblatt?
Correct Answer: D. Perceptron

Q: Which element of a neural network determines how quickly or slowly the model learns?
Correct Answer: C. Learning rate

Q: Which network is known for minimizing the squared error between the actual output and the target output?
Correct Answer: B. Ada Line

Q: What does BAM stand for in neural networks?
Correct Answer: C. Bidirectional Associative Memory

Unit 2 - Fill in the Blanks with Answers

Q: The _____ in a neural network represents the strength of the connection between neurons.
Correct Answer: Weight

Q: The _____ function in a neural network introduces non-linearity to the model.
Correct Answer: Activation

Q: The Perceptron model was designed to solve _____ classification problems.
Correct Answer: Binary

Q: In a Back-Propagation network, the _____ is propagated backwards through the network to update the weights.
Correct Answer: Error

Q: _____ Learning uses labeled data to train neural networks.
Correct Answer: Supervised

Q: ADALINE stands for _____
Correct Answer: Adaptive Linear Neuron

Q: The _____ rate in a neural network controls how much the weights are adjusted with respect to the loss gradient.
Correct Answer: Learning

Q: A _____ is a computational model inspired by the structure and functioning of biological neural networks.
Correct Answer: Neural network

Q: Associative Memory Networks are used for pattern _____ and recall.
Correct Answer: Storage

Unit 3 - Multiple Choice Questions with Answers

Q: Bayes' theorem is primarily used to calculate _____.
Correct Answer: A. Probabilities

Q: The Naïve Bayes classifier assumes that features are _____.
Correct Answer: B. Independent

Q: The principle that suggests a model should be as simple as possible while fitting the data is known as _____.
Correct Answer: A. Occam's Razor

Q: In Bayesian learning, the term 'prior' refers to _____.
Correct Answer: A. Initial beliefs before seeing data

Q: The EM algorithm is primarily used for _____.
Correct Answer: A. Parameter estimation

Q: In computational learning theory, the term PAC stands for _____.
Correct Answer: A. Probably Approximately Correct

Q: In Bayesian learning, 'likelihood' refers to _____.
Correct Answer: A. The probability of the data given the model

Q: Which of the following is a key assumption of the Naive Bayes classifier?
Correct Answer: A. Conditional independence

Q: Instance-based learning focuses on _____.
Correct Answer: A. Storing all training examples

Q: In computational learning theory, the Vapnik-Chervonenkis (VC) dimension measures _____.
Correct Answer: A. The capacity of a model to learn

Unit 3 - Fill in the Blanks with Answers

Q: Bayes' theorem calculates _____ in probabilistic models.
Correct Answer: Posterior probabilities

Q: The Naïve Bayes classifier assumes _____ between features.
Correct Answer: Independence

Q: The principle that prefers the simplest hypothesis is called _____.
Correct Answer: Occam's Razor

Q: In Bayesian learning, the belief before seeing the data is called the _____.
Correct Answer: Prior

Q: The term PAC stands for _____ learning.
Correct Answer: Probably Approximately Correct

Q: The EM algorithm involves two steps: Expectation and _____.
Correct Answer: Maximization

Q: The Vapnik-Chervonenkis (VC) dimension measures the _____ of a model.
Correct Answer: Capacity

Q: In instance-based learning, predictions are based on the _____ data points.
Correct Answer: Nearest

Q: The term 'likelihood' in Bayesian learning refers to the _____ of the data given the model.
Correct Answer: Probability

Q: Instance-based learning stores _____ training examples for future use.
Correct Answer: All