Program: BE Computer Engineering

Curriculum Scheme: Revised 2016

Examination: Third Year Semester VI

Course Code: CSDLO6021 and Course Name: Machine Learning

Time: 1 hour Max. Marks: 50

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Note to the students:- All the Questions are compulsory and carry equal marks .

Q1.	A software designed to evaluate whether a customer account is hacked or not is an example of:
Option A:	Unsupervised Learning
Option B:	Supervised classification
Option C:	Supervised Regression
Option D:	Optimization
Q2.	Which categories of machine learning techniques are supervised?
Option A:	classification and regression
Option B:	regression and association analysis
Option C:	classification and cluster analysis
Option D:	cluster analysis and association analysis
Q3.	What is the sequence of the steps in the machine learning process?
Option A:	Acquire -> Prepare -> Analyze -> Report -> Act
Option B:	Acquire -> Prepare -> Analyze -> Act -> Report
Option C:	Prepare -> Acquire -> Analyze -> Report -> Act
Option D:	Prepare -> Acquire -> Analyze -> Act -> Report
Q4.	After training the ML model, we see how accurately it predicts the answer/responds. What is it called?
Option A:	Recognition
Option B:	Predictive models
Option C:	Testing
Option D:	Training
Q5.	Dendrites are
Option A:	fibers of nerves
Option B:	nuclear projections
Option C:	other name for nucleus
Option D:	Axon
Q6.	Does backpropagation learning is based on gradient descent along error surface?

Option A:	cannot be said
Option B:	Yes
Option C:	No
Option D:	it depends on gradient descent but not error surface
Q7.	Which of the following is incorrect?
Option A:	Direct search methods are useful when the optimization function is not differentiable
Option B:	The gradient of f(x,y) is a vector pointing in the direction of the steepest slope at that point.
Option C:	The Hessian is the Jacobian Matrix of second-order partial derivatives of a function.
Option D:	The second derivative of the optimization function is used to determine if we have reached an optimal point
Q8.	Which one is not Derivative free optimization method?
Option A:	Random search method
Option B:	Downhill Simplex method
Option C:	Genetic Algorithm
Option D:	Gradient based methods
Q9.	Downhill simplex method is an example of :
Option A:	Derivative based optimization
Option B:	Derivative free optimization
Option C:	Genetic optimization
Option D:	Random search optimization
Q10.	Steepest Descent method is an example of :
Option A:	Derivative based optimization
Option B:	Derivative free optimization
Option C:	Genetic optimization
Option D:	Random search optimization
Q11.	Optimization is the process of
Option A:	Training the model
Option B:	Obtaining the best results under any given circumstances.
Option C:	Finding principal components from the dataset
Option D:	Splitting dataset into training and testing set
Q12.	Other names for 'variable' are
Option A:	categorical, nominal
Option B:	feature, column, attribute
Option C:	sample, row, observation
Option D:	numerical, quantitative
Q13.	This sentence is FALSE regarding regression?

Option A:	It relates inputs to outputs.
Option B:	It is used for prediction.
Option C:	It may be used for interpretation.
Option D:	It discovers causal relationships.
Q14.	In linear regression, the least squares method is used to
Option A:	Determine the distance between two pairs of samples.
Option B:	Determine whether the target is categorical or numerical.
Option C:	Determine the regression line that best fits the samples.
Option D:	Determine how to partition the data into training and test sets.
Q15.	A correlation between age and health of a person found to be -1.09 . On the basis of this you would tell the doctors that :
Option A:	Age is good predictor of health and is positively correlated.
Option B:	Age is poor predictor of health and is negatively correlated.
Option C:	Age is good predictor of health and is negatively correlated.
Option D:	Age is poor predictor of health and is positively correlated.
Q16.	How many coefficients you need to estimate a simple linear model(one independent variable)?
Option A:	1
Option B:	2
Option C:	3
Option D:	4
Q17.	Decision trees are an algorithm for which machine learning task?
Option A:	Clustering
Option B:	Dimensionality reduction
Option C:	Classification
Option D:	Regression
Q18.	Below are the 8 actual values of target variable in the train file. [0,0,0,1,1,1,1,1] What is the entropy of the target variable?
Option A:	-(5/8 log(5/8) + 3/8 log(3/8))
Option B:	5/8 log(5/8) + 3/8 log(3/8)
Option C:	3/8 log(5/8) + 5/8 log(3/8)
Option D:	5/8 log(3/8) – 3/8 log(5/8)
Q19.	Suppose you have trained an SVM with linear decision boundary after training SVM, you correctly infer that your SVM model is under fitting. Which of the following option would you more likely to consider iterating SVM next time?
Option A:	You want to increase your data points
Option B:	You want to decrease your data points
Option C:	You will try to calculate more variables
Option D:	You will try to reduce the features

Q20.	Identifying fraudulent or criminal activity is an example of:
Option A:	Regression
Option B:	Clustering
Option C:	Classification
Option D:	Reinforcement
Q21.	Which of the following statements about Naive Bayes is incorrect?
Option A:	Attributes are equally important.
Option B:	Attributes are statistically dependent of one another given the class value.
Option C:	Attributes are statistically independent of one another given the class value.
Option D:	Attributes can be nominal or numeric
Q22.	Which technique would perform better for reducing dimensions of a data set?
Option A:	Removing columns which have too many missing values
Option B:	Removing columns which have high variance in data
Option C:	Removing columns with dissimilar data trends
Option D:	Adding columns with dissimilar data trends
Q23.	If eigenvalues are roughly equal
Option A:	PCA will perform outstandingly
Option B:	PCA will perform badly
Option C:	PCA will perform moderately
Option D:	Can't say
Q24.	Which algorithm is used for solving temporal probabilistic reasoning?
Option A:	Hill-Climbing
Option B:	Hidden Markov Model
Option C:	Depth-first search
Option D:	Breadth-first search
Q25.	What does K represents in K-means ?
Option A:	Number of clusters
Option B:	Number of principal components
Option C:	Number of nodes in decision tree
Option D:	Number of outliers