Question 1
Which of the following is not true about Machine Learning? 1 / 1 point

Machine Learning models iteratively learn from data and allow computers to find hidden insights.
Machine Learning models help us in tasks such as object recognition, summarization, and recommendation.
Machine Learning was inspired by the learning process of human beings.
Machine learning gives computers the ability to make decision by writing down rules and methods and being explicitly programmed.

Correct
Correct! Machine learning can learn without explicitly being programmed to do so.

Question 2
Which of the following is a Machine Learning technique? 1 / 1 point

Clustering
Classification
Regression/Estimation
All of the above

Correct
Correct! All of the above are considered machine learning techniques along with association, anomaly detection, sequence mining, and recommendation systems.

Question 3
Which of the following is true for Multiple Linear Regression? 1 / 1 point

One independent variable is used to predict a dependent variable.
Observational data are modeled by a function which is a nonlinear combination of the model parameters and depends on one or more independent variables.
Multiple independent variables are used to predict a dependent variable.
The relationship between the independent variable x and the dependent variable y is modeled as an nth degree polynomial in x.

Correct
Correct! This contrasts simple linear regression, which only uses one independent variable.

Question 4
Which one is not an example of a classification problem? 1 / 1 point

To predict the category to which a customer belongs to.
To predict whether a customer switches to another provider/brand.
To predict the amount of money a customer will spend in one year.
To predict whether a customer responds to a particular advertising campaign or not.

Correct
Correct! The amount of money spent is not a categorical target variable.

Question 5
Which of the following statements are TRUEabout Logistic Regression? (select two) 1 / 1 point

==Logistic regression can be used both for binary classification and multi-class classification.==
Correct
Almost correct! There are other true statements about Logistic Regression
==Logistic regression finds a regression line through the data to predict the probability of a point belonging to a class.==
Logistic regression is analogous to linear regression but takes a categorical/discrete target field instead of a numeric one.

Correct
Almost correct! There are other true statements about Logistic Regression.

In logistic regression, the dependent variable is always binary.

Question 6
Which statement is FALSEabout k-means clustering? 1 / 1 point

==As k-means is an iterative algorithm, it guarantees that it will always converge to the global optimum.==
The objective of k-means, is to form clusters in such a way that similar samples go into a cluster, and dissimilar samples fall into different clusters.
k-means divides the data into non-overlapping clusters without any cluster-internal structure.

Correct
Correct! K-Means is a heuristic algorithm, so it is guaranteed to converge to a result that could be a local optimum.

Question 7
Which one best describes the clustering process for k-means clustering? 1 / 1 point

k-means creates clusters by grouping data points with similar labels.
==The objective of k-means is to form clusters in such a way that similar samples go into a cluster, and dissimilar samples fall into different clusters.==
k-means clustering creates a tree of clusters.
k-means divides the data into clusters with minimal overlap such that there are low chances of dissimilar samples in the same cluster.

Correct
Correct! K-Means seeks to create non-overlapping clusters.

Question 8
What is a hyperplane in SVM? 1 / 1 point

Features
Classes
-Data points
<mark>Decision boundaries</mark>

Correct
Correct! Each hyperplane has its own equation which creates the largest margin between two classes.

Question 9
Suppose you'd like to determine how a model performs on predicting the minimum and maximum temperature for a given day. Which metric is the most appropriate to use? 1 / 1 point

Log Loss
F1 Score
<mark>Root Mean Squared Error</mark>
False positives

Correct
Correct! Root mean squared error is in the same units as the response vector, so it's easier to relate information for the regression problem.

Question 10
When do we use regression trees instead of decision trees? 1 / 1 point

When some of the independent variables are continuous
When the response is categorical instead of continuous
When all of the independent variables are continuous
<mark>When the response is continuous instead of categorical</mark>

Correct
Correct! Regression trees split the data based on features like in decision trees, but the prediction is an average across the data points in that node.