(MACHINE LEARNING WORKSHEET-6)

ANSWER-1) A) GridSearchCV()

ANSWER-2) D) All of the above

ANSWER-3) A) The regularization will increase

ANSWER-4) A) It regularizes the decision tree by limiting the maximum depth up to which a tree can be grown.

ANSWER-5) C) In case of classification problem, the prediction is made by taking mode of the class labels predicted by the component trees.

ANSWER-6) C) Both of them

ANSWER-7) A) Bias will increase, Variance decrease

ANSWER-8) B) model is overfitting

ANSWER-9) The Gini Index or Gini Impurity is calculated by subtracting the sum of the squared probabilities of each class from one. It favours mostly the larger partition and are very simple to implement. In simple terms, it calculates the probability of a certain randomly selected feature that was classified incorrectly. The Gini index varies between 0 and 1, where 0 represents purity of the classification and 1 denotes random distribution of elements among various classes. A Gini Index of 0.5 shows that there is equal distribution of elements across some classes.

ANSWER-10) Random forest algorithm avoids and prevents overfitting by using multiple trees. The results are not accurate. This gives accurate and precise results. Decision tree require low computation, thus reducing time to implements and carrying low accuracy.

ANSWER-11) Feature scaling is a technique to standardized the independent features present in the data in affixed range.it is performed during the data preprocessing to handle highly varying magnitudes or values or units. The most common techniques of feature scaling are normalization and standardization. Normalization is used when we want to bound our values between two numbers, typically, between [0,1] or [-1,1]. while standardization transforms the data to have zero mean and a variance of 1, they make our data unitless.

ANSWER-12) Gradient descent is an optimization algorithms which is commonly used to train machine learning models and neural networks. Training data helps these models learn over time, and the cost function within gradient descent specifically acts as a barometers, gauging its accuracy with each iteration of parameter updates.

ANSWER-13) This model would receive a very good accuracy score as it predicted correctly for the majority of observation , but this hides the true performances of the model which is objectively not good as it only predicts for one class.

ANSWER-14) The F-score (also known as the F1 score of F-measure) is a metric used to evaluate the performance of a machine learning model. It combines precision and recall into a single score. F-measure formula: F-score=2\* ( precision\*recall)/(precision + recall)

ANSWER-15) The fit (data) method is used to compute the mean and std dev for a given feature to be used further for scaling. The transform(data)method is used to perform scaling using mean and std dev calculated using the . fit() method. the fit\_transform() method does both fits and transform.