1. How soft margin classifier different from Maximum margin classifier

Ans : The maximum margin classifier is a classifier in svm, where it can classifies the associated distance from the decision boundary, where the soft margin classifier implies when two classes are nor linearly separable the condition for the optimal hyperplane can be relaxed where it is included an extra term.

2. What does the slack variable Epsilon (ε) represent?

Ans: Epsilon notion used in svm where It can specifies no penalty associated in the train data for loss function with respect to predicted points within a epsilon distance from the actual value.

3. How do you measure the cost function in SVM? What does the value of C signify?

Ans: When to maximize the margin between the datapoints and hyperplane, the loss function will help to maximize the margin, if there is no misclassification the model predicted the class of our data points, if there is misclassification the model done a mistakes on the prediction of the class of our data points.

'C' is regularization term that controls the trade off between training error and testing error, it is as ability to generalize the classifier .

4. Given the above dataset where red and blue points represent the two classes, how will you use SVM to classify the data

Ans: Covert the datapoints into linear or else we can apply rbf kernel ofcourse it is computational cost and complex.

5. What do you mean by feature transformation?

Ans : To convert the data set into a linearly separable one, a simple transformation into a new feature space (X', Y') can be made and it is called transformed featured space.