

MACHINE LEARNING WORKSHEET – 2

1. Which of the following are disadvantages of using Hard Margin SVM classifier?

- A) They allow misclassifications, that's why they are not optimal.
- B) They cannot be used when the data is not completely linearly separable while allowing no errors.
- C) They are not optimal to use in case of outliers.
- D) None of the above.

Answer : **B**

2. Which of the following statements are true regarding maximal margin classifier?

- A) It is the most optimal classifier in a completely linearly separable data.
- B) It's the classifier for which the margin length or the distance between the closest data-point on either side of the classifier and the classifier is maximized.
- C) Any possible classifier which can linearly separate the data of two classes is called maximal margin classifier.
- D) All of the above.

Answer : **B**

3. Which of the following statements are true regarding soft margin SVM classifier?

- A) They are less sensitive to outliers and can be used even in their presence.
- B) They make sure that there is no data point present in the margin area.
- C) They allow some degree of errors or misclassification.
- D) They can be used in case data is not completely linearly separable.

Answer : **A,C,D**

4. Which of the following statements are true regarding SVMs?

- A) They take the data from lower dimensional space to some higher dimensional space in case the data is not likely to be linearly separable.
- B) They use the kernel tricks to escape the complex computations required to transform the data.
- C) If the data is not linearly separable SVM technique cannot be used.
- D) All of the above.

Answer : **A,B**

5. Which of the following Statements are true regarding the Kernel functions used in SVM?

- A) These functions gives value of the dot product of pairs of data-points in the desired higher dimensional space without even explicitly converting the whole data in to higher dimensional space.
- B) We have to first convert the whole data in to the higher dimensional space before applying the kernel function.
- C) The data product values given by the kernel functions are used to find the classifier in the higher dimensional space.
- D) None of the above

Answer : **A,C**

6. How can SVM be classified?

- A) It is a model trained using unsupervised learning. It can be used for classification and regression.
- B) It is a model trained using unsupervised learning. It can be used for classification but not for regression
- C) It is a model trained using supervised learning. It can be used for classification and regression.
- D) It is a model trained using supervised learning. It can be used for classification not for regression.

Answer : **C**

7. The quality of an SVM model depends upon:

- A) Selection of Kernel
- B) Kernel Parameters
- C) Soft Margin Parameter C
- D) All of the above

Answer : **D**

8. The SVM's are less effective when:

- A) The data is linearly separable.
- B) The data is clean and ready to use.
- C) The data is noisy and contains overlapping points.
- D) None of these.

Answer : **C**

9. What would happen when you use very small C ($C \sim 0$)?

- A) Misclassification would happen.
- B) Data will be correctly classified.
- C) Can't say
- D) None of these.

Answer : **A**

10. What do you mean by generalization error in terms of the SVM?

- A) How far the hyperplane is from the support vectors.
- B) How accurately the SVM can predict outcomes for unseen data.
- C) The threshold amount of error in an SVM.
- D) None of these.

Answer : **B**