**MACHINE LEARNING – WORKSHEET 7**

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

Answer: A) SVMs use hyperplanes as decision boundary for classification.

B) SVMs uses kernel functions to avoid computational load of converting the whole dataset in to higher dimensional space where the data is linearly separable.

2. Consider the radial basis kernel function given below and answer the following question:

Answer: A) Red

3. Which of these statements are true regarding the RBF kernel of SVM?

Answer: B) Higher the value of gamma of RBF the more flexible the classifier curve becomes in the original dimensions. C) A very high value of gamma may lead to overfitting

4. Consider the following graph and answer the question given below:

Answer: A) A Hard Margin Linear Classifier

5. Consider the following image and answer the question: What will happen if we decrease the value of C, the soft margin constant?

Answer: B) The margin width will Increase

6. Consider the following image and answer the question: Figure A: Figure B: In the above figure red circles represent class A data points and plus sign represents Class B. Both of the figures are on the same data. Among the above given figure-A and Figure-B, which of these figure have higher value of C hyperparameter?

Answer: B) Figure B

7. In the following figures red circles represent Class A data points and plus represent Class B data points. We are using a linear kernel with Degrees D1, D2 and D3 as shown in the figures A, B and C respectively.

Answer: C) D3>D2>D1

8. In the following figures red circles represent Class A data points and plus represent Class B data points. In the below figures we are using RBF kernel with varying degrees Gamma:

Answer: C) Gamma2 > Gamma 1

9. Let us assume you are using RBF kernel in SVM with a very high Gamma value. What does this signify?

Answer: A) The model would consider even far away points from hyperplane for modelling B) The model would consider only the points close to the hyperplane for modelling

10. What would happen when you use very small C (C~0)?

Answer: A) A large number of misclassification would happen