Quiz 3: Data science
Total Marks: 8   2018-05-07

 Name: --   **Registration #:**
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Q1 [True or False] SVM: Will the removal of non-support vector points affect the decision boundary for SVM?

   a) True   b) False

Q2 [2] Considering a 2 dimensional data set, answer the following questions:

Given A = $\begin{bmatrix} 24 \\ 48 \end{bmatrix}$ and X = $\begin{bmatrix} 2 \\ 4 \end{bmatrix}$

Is X vector is Eigen vector of matrix A? If no, why not? If yes, what will be the Eigen value?

Q3 [1] If you want to reduce from 4 dimensional data to 3 dimensional data, how many Eigen vector do you need to find out. In which direction the most important Eigen vector will point?

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Q4. [1 marks] SVM: Draw the approximate dicision bounadry if value of C

parameter is very large.

Q5. [1 mark] Why do we need Kernels in SVM?

Q6. [1 mark] SVM is formulated as an optimiation problem with a objective fucntions and constraints. What do you think if we will have multiple optimal solutions or a single optimal solution with maximum margin? Explain your choice with with reason.

Q7. [1 mark] How can we solve multi-class (more than 2 classes) classification problem using SVM?