Q2.5.

**Description of files**

Initial,computeCenter, findCenter-> get the initial centers(first K), give points to centers, find mean of points for new centers

Km.m-> call the kmeans function

Initialrand-> get random centers

SS-> Calculate the total group sum of square

Paircount,paircountpair, paircall-> all used to calculate the pair sum values.

1)

For k=2

Total sum of square values:- 9.9838e+06

Pair counting measure:-

p1:- 0.000735735735735736

p2:- 0.000265265265265265

p3:- 0.000500500500500501

For k=4

Total sum of square values:- 33.2052e+05

Pair counting measure:-

p1:- 0.000224224224224224

p2:- 0.000776776776776777

p3:- 0.000500500500500501

For k=6

Total sum of square values:- 45.3860e+05

Pair counting measure:-

p1:- 8.30830830830831e-05

p2:- 0.000917917917917918

p3:- 0.000500500500500501

2) km6.m file has been used to get this answer.

1

3)

Plot in the file

4)

Plot in the file