**Answer to the question no 7 (a)**:

Compute the Euclidean distance between each observation and the test point.

X1 = X2 = X3 = 0

Distance to observation1 = = 3

Distance to observation2 = = 2

Distance to observation3 = =

Distance to observation4 = =

Distance to observation5 = =

Distance to observation6 = =

**Answer to the question no 7 (b)**:

The nearest neighbor to the test point is Observation 5 (Green). So, the predication for K=1 is Green.

Here, we use K-nearest neighbours classifier. Suppose that we choose K = n. Then KNN will first identify the nth observations that are closest to the chosen point. Here, for (0,0,0) point, the closest point is (-1,0,1) as we can take one observation. So, the predication is Green.