Exp: 14

K-Means

Aim:

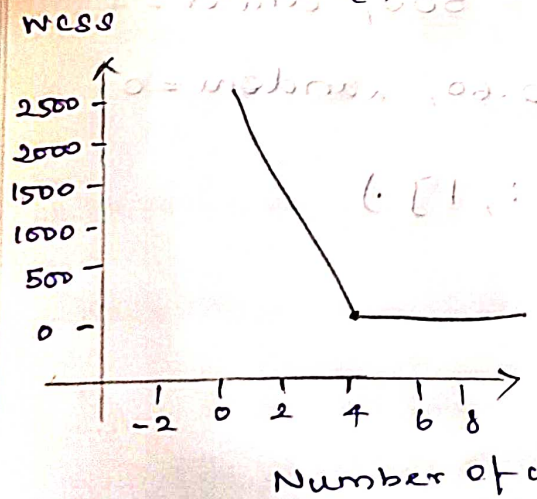
To implement a k-means clustering technique using python language.

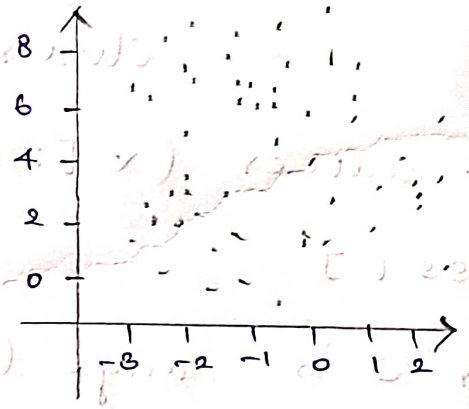
Code:-

```
import numpy as np
import panda as pd.
from matplotlib import pyplot as plt
from sklearn dataset ... samples .... generator import
from sklearn cluster import k-means

x, y = make-blobs (n sample = 300, center = 4,
                   cluster-slot = 0.60, random = 0)
plt. scatter (x [:, 0], x [:, 1])
wcss [ ]
for c in range (1, 11):
    kmeans = k means (n-cluster = 1, unit =
                                    'k-means++'
    max-iter = 300, n-itr = 10, random = 0)
    k-means = fit (x)
wcss. append (k-means .Intera-)
```

```
plt.plot(range(1,11), wcss)
plt.title('Elbow method')
plt.xlabel('cluster')
plt.ylabel('wcss')
plt.show()
kmeans = Kmeans(n_cluster=4, unit='k-mean+1'
max_iter=300, n_init=10, random_state=0)
Pred_y = kmeans.fit_predict(x)
plt.scatter(x[:,0], x[:,1])
plt.scatter(kmeans_cluster.center_[:,0],
                S=30, c='red')
plt.show()
```





Result:

K means clustering technique using python language is, successfully executed & output verified.