EXPERIMENT:5

AIM:To find compensator reactive power to obtain zero voltage regulation using matlab.

QUESTION: For a supply of 10kv line to neutral voltage with short circuit level of 250mva ans xs/rs ratio of 5,supplying a star connected load ,inductive load whose mean power is 25mw and whose reactive power is 50 mva,all quantities are per phase. Determine compensator reactive power such that voltage regulation is zero using matlab

MATLAB CODE:

```
clc;

clear all;

pl=25000000;

ql=50000000;

scmva=250e+06;

v=10e+03;

phi=atan(5);

z=(v^2)/scmva

r=z*cos(phi)

x=z*sin(phi)

a=z^2

b=2*(v^2)*x

c=(pl^2)(x^2)+(pl^2)(r^2)+(2*(v^2)*pl*r)

qs=[a b c];

qsr=roots(qs);

qsmin=max(qsr)

qc=qsmin-ql
```

OUTPUT

z =0.4000

r =0.0784

x =0.3922

a =0.1600

b =7.8446e+07

c =4.9223e+14

qsmin =-6.3572e+06

qc =-5.6357e+07