**ELEMENTS OF POWER SYSTEMS**

**EXPERIMENT 4**

**Codes:**

**1)**

clc

clear all

%Single phase 2 wire

V=input("enter the rms voltage in V: ");

L=input("enter length in m: ");

P1=input("enter power in VA: ");

pf=input("enter power factor: ");

N=input("enter the efficiency for system: ");

r=input("enter the resistivity in ohm m: ");

P=P1\*pf;

loss= (100-N)\*P/100;

Vm=sqrt(2)\*V;

I=sqrt(2)\*P/(pf\*Vm);

a=r\*L\*I^2\*2/loss;

Volume\_required=2\*a\*L

%3 phase 3 wire

P=P1\*pf;

loss= (100-N)\*P/100;

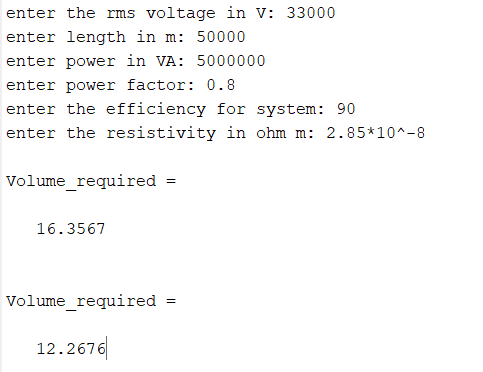
Vm=sqrt(2)\*V;

I=sqrt(2)\*P/(pf\*Vm\*sqrt(3));

a=r\*L\*I^2\*3/loss;

Volume\_required=3\*a\*L

**Output:**



**2)**

clc

clear all

%Single phase 2 wire

V=input("enter the rms voltage in V: ");

L=input("enter length in m: ");

P=input("enter power in Watts: ");

pf=input("enter power factor: ");

N=input("enter the efficiency for system: ");

r=input("enter the resistivity in ohm cm: ");

specific\_gravity=input("enter specific\_gravity: ");

loss= (100-N)\*P/100;

Vm=sqrt(2)\*V;

I=sqrt(2)\*P/(pf\*Vm);

a=r\*L\*I^2\*2/loss;

Volume\_required1=2\*a\*L

weight1=Volume\_required1\*specific\_gravity

%3 phase 3 wire

loss= (100-N)\*P/100;

Vm=sqrt(2)\*V;

I=sqrt(2)\*P/(pf\*Vm\*sqrt(3));

a=r\*L\*I^2\*3/loss;

Volume\_required2=3\*a\*L

weight2=Volume\_required2\*specific\_gravity

**Output:**

