5.

**PROGRAM:**

clc; clear all;

v=1;%Prefault voltage sysv=20;%system base voltage bmva=100;%system base mva z1=input('enter z1');

Z2=Z1 ;

z0=input('enter z0'); zf=input('Enter the value of zf'); for i=1:4

A=menu('Enter the type of fault','1.LLL fault','2.LG fault' ,'3.LL fault','4.LLG fault'); ib=bmva/ (1.732\*sysv) ;

a=-0.5+.866j; if(A==1)

disp('three phase fault' );

fprin tf('\n%s \n',repmat('-',1,25')) ifpu=v/(z1+zf)

ifa1=ifpu\*ib ; end

if(A==2)

disp('Single line to ground fault'); fprintf('\n%s \n',repmat('-',1,25')) ia1=v/(z0+z1+z2+3\*zf); ifpu=3\*ia1;

ifa1=ifpu\*ib ; end

**if(A==3)**

disp('double line fault') ; fprintf('\n%s \n',repmat('-',1,25')) ia1=v/{z1+z2+zf);

ia2=-{1.732\*ia1);

ifa1=abs(ia2)\*ib; end

**if(A==4)**

disp('double line to ground fault'); fprintf('\n%s \n',repmat('-',1,25')) z={z2\*{z0+{3\*zf)) )/{zO+z2+3\*zf); ia1=v/(z1+z);

ia2={-v/z2)+((ia1\*z1)/z2); ia0=-(ia1+ia2);

ib1=iaO+ {a\*a\*ia1)+(a \*ia2); ic1=iaO+ {a \* ia 1 )+(a \*a\*ia2); ifapu1=(ib1+ic1); ifa1=ifapu1\*ib;

end ifa1=abs(ifa1);

fmva=1.732 \*sysv\*abs(ifa1 ); fprintf('fault current %g KA \n',ifa1); fprintf{'fault MVA %g MVA \n',fmva); fprintf{'\n%s \n',repmat('=' ,1,75')) **i=i+1 ;**

end

**OUTPUT:**

enter z10.137\*j enter z00.1443\*j

Enter the value of zf0.1\*j three phase fault

ifpu = 0.0000 - 4.2194i

fault current 12.1807 KA fault MVA 421.941 MVA

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Single line to ground fault

fault current 12.057 KA fault MVA 417.653 MVA

========

double line fault

fault current 13.369 KA fault MVA 463.102 MVA

double line to ground fault fault current 8.44421 KA fault MVA 292.507 MVA