HIGH FREQUENCY RESPONSE OF RESISTOR

R= ; %given

C= ; %given

L1= ; %from the solved part

f=1000:10000:10000000000;

z1=(1i\*2\*3.14\*f\*L1)+(1./((1i\*2\*3.14\*f\*C)+(1./R)));

semilogx(f,abs(z1));

grid on;

hold on;

xlabel('Frequency');

ylabel('Impedance');

title(' HIGH FREQUENCY RESPONSE OF RESISTOR');

if varying l asked consider l1,l2…. So on

similarly for varying capictor….

HIGH FREQUENCY RESPONSE OF CAPACITOR

f=(10^5:10000:10^9);

rs= \*(sqrt(f))\* ; %from solved part

a= ; %from awg

u=1.2\*(10e-6);

l1= ; % twice of the given length

L1=(u\*l1\*(log((2\*l1)/a)-1))/(2\*pi);

c= ; % given

re=( )./f;

w=2\*pi.\*f;

z1=1i.\*w\*L1;

z2=((1i.\*w\*c)+(1./re));

z3=1./z2;

z4=rs+z1+z3;

loglog(f,abs(z4));

grid on;

hold on;

xlabel('Frequency');

ylabel('Impedance');

title(' HIGH FREQUENCY RESPONSE OF CAPACITOR');

HIGH FREQUENCY RESPONSE OF INDUCTOR

C= ; %given

L= ; %given

R= ; %rac

f=1000:10000:10000000000;

z=(1./((1i\*2\*3.14\*f\*C)+(1./(R+(2\*3.14\*f\*L)))));

semilogx(f,abs(z));

grid on;

hold on;

xlabel('Frequency');

ylabel('Impedance');

title(' HIGH FREQUENCY RESPONSE OF INDUCTOR');

RADIATION PATTERN

y = pi./ ; %y=kl/2 and k=(2\*pi)/labda and l=lamda/

x = 0:.1:360; % angle

U = (cos(y\*cos(x))-cos(y))./sin(x);

U = abs(U);

figure( );

polar(x,U);

title('Radiation Pattern for l=');

figure( );

plot(x,U)

BROADSIDE ARRAY

n0= ; % no of elements

l=1;

d=l/ ; % length of array

k=(2\*pi)/l;

t1=0:0.01:360; % angle

si=(k\*d.\*cos(t1));

af=(sin((n0.\*si)./2))./(n0.\*sin(si./2));

figure( );

polar(t1,af);

title('Broadside pattern for d= for n=')

hold on;

ENDFIRE ARRAY

n= ; %no of elements

l=1;

d=l/ ; % length

k=(2\*pi)/l;

t1=0:0.01:360;

sil=(k\*d.\*(cos(t1)-1)); % b=180

afl=(sin((n.\*sil)./2))./(n.\*sin(sil./2));

si=(k\*d.\*(cos(t1)+1)); % b=0

si1=k\*d1.\*(cos(t1)+1);

af=(sin((n.\*si)./2))./(n.\*sin(si./2));

figure( );

polar(t1,afl);

title('Endfire pattern for d= for n= ')

hold on;

polar(t1,af);

title('Endfire pattern for d= for n= ')

hold on;

PHASE ARRAY

n= ; %no of elements

l=1;

b=(k.\*d.\*cos(%angle)); % b value

d=l/ ; % length

k=(2\*pi)/l;

t1=0:0.01:360;

si=((k\*d.\*cos(t1))-b);

af=(sin((n.\*si)./2))./(n.\*sin(si./2));

figure( );

subplot(2,2,2)

polar(t1,af);

title('Phase array pattern for d= for n= for theta=')

hold on;

subplot(2,2,1)

polar(t1,af1);

title('Phase array pattern for d= for n= for theta=')

hold on;