**AIM :-** TO OBSERVE THE EFFECTS OF THE FOLLOWING DISTORTIONS INTRODUCED BY THE CHANNEL DUE TO ITS NON IDEAL CHARACTERISTICS:-

a) AMPLITUDE DISTORTION (due to non ideal amplitude spectrum of channel)

b) PHASE DISTORTION (due to non ideal phase spectrum of channel)

c) DISTORTION CAUSED BY BANDLIMITED CHANNEL

clc;

clear;

freq = 1;

x = -1:0.01:1;

y = sin(2\*pi\*freq\*x);

subplot(4,1,1)

plot(x,y);

ff\_trans = fft(y);

distort\_mag = 10\*randn(size(x));

mag = abs(ff\_trans)+distort\_mag;

phase = angle(ff\_trans);

noise\_mag = mag.\*exp(j\*phase);

subplot(4,1,2)

plot(x,ifft(noise\_mag));

distort\_phase = 100\*randn(size(x));

mag2 = abs(ff\_trans);

phase2 = angle(ff\_trans).\*distort\_phase;

noise\_phase = mag2.\*exp(j\*phase2);

subplot(4,1,3)

plot(x,ifft(noise\_phase));

bandpass = 0.5\*sign(x+0.5)-0.5\*sign(x-0.5);

band = ff\_trans.\*bandpass;

subplot(4,1,4)

plot(x,fftshift(ifft(band)));



