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BRANCH-INFORMATION TECHNOLOGY-1

**EXPERIMENT – 2(B)**

**OBJECTIVE:** Write a program in MATLAB to draw Frequency Modulation waveform.

**PROGRAM:**

clc;

clear all;

close all;

a=1;

fm= input('Message Frequency :');

fc = input ('Carrier Frequency :');

u = input('Modulating Index :');

t = 0:0.01:2\*pi;

m = a\*cos(2\*pi\*fm\*t);

c = a\*sin(2\*pi\*fc\*t);

y= a\*cos(2\*pi\*fc\*t+u.\*sin(2\*pi\*fm\*t));

%y= a\*sin(2\*pi\*fc\*t+u.\*cos(2\*pi\*fm\*t));

subplot(3,1,1);

plot(t,m);

xlabel('Time');

ylabel('Amplitude');

title('Message Signal');

subplot(3,1,2);

plot(t,c);

xlabel('Time');

ylabel('Amplitude');

title('Carrier Signal');

subplot(3,1,3);

plot(t,y);

xlabel('Time');

ylabel('Amplitude');

title('FM Wave');

**OBSERVATION:**

For the following waveforms, we use

1. Message wave Frequency = 1.0 Hz
2. Carrier Wave Frequency = 5.0 Hz
3. Modulating Index = 10.0