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ROLL NO :RA2211004050026

SUB : COMMUNICATION LABORATORY

SUB CODE : 21ECC322L

EXPERIMENT NO-1.AM MODULATOR AND DEMODULATOR

# CODE:

close all clear all clc fs=8000;

fm=20; fc=500; Am=1; Ac=1;

t=(0:0.1\*fs)/fs; m=Am\*cos(2\*pi\*fm\*t); c=Ac\*cos(2\*pi\*fc\*t); ka=0.5;

u=ka\*Am; s1=Ac\*(1+u\*cos(2\*pi\*fm\*t)).\*cos(2\*pi\*fc\*t); subplot(4,3,1:3);

plot(t,m);

title('Modulating signal(fm=20Hz)'); subplot(4,3,4:6);

plot(t,c);

title('Carrier signal(fc=500Hz)'); subplot(4,3,7);

plot(t,s1);

title('Under Modulated signal(ka.Am=0.5)'); ka1=1;

u1=ka1\*Am; s2=Ac\*(1+u1\*cos(2\*pi\*fm\*t)).\*cos(2\*pi\*fc\*t); subplot(4,3,8);

plot(t,s2);

title('Exact Modulated signal(ka.Am=1)'); ka2=2;

u2=ka2\*Am; s3=Ac\*(1+u2\*cos(2\*pi\*fm\*t)).\*cos(2\*pi\*fc\*t); subplot(4,3,9);

plot(t,s3);

title('Over Modulated signal(ka2.Am=2)'); r1=s1.\*c;

r2=s2.\*c; r3=s3.\*c;

[b,a]=butter(1,0.01); mr1=filter(b,a,r1); mr2=filter(b,a,r2); mr3=filter(b,a,r3); subplot(4,3,10);

plot(t,mr1); title('Demodulated signal(U)') subplot(4,3,11);

plot(t,mr2); title('Demodulated signal(E)') subplot(4,3,12);

plot(t,mr3); title('Demodulatedsignal(O)’)

OUTPUT:



