ACE
Engineering College
(An Autonomous Institution)

Question Paper Code: EC403PC | ACE-R20

Semester End Examination
II B. Tech- II Semester- AUGUST -2022
ANALOG AND DIGITAL COMMUNICATIONS
ELECTRONICS AND COMMUNICATION ENGINEERING

Time: 3 Hours **Max. Marks: 70**

H. T. No										

Answer any 5 Questions out of 8 Questions from the following

Q.No	Question	Marks
1.	Define modulation. How AM is generated using square law modulator? Derive relevant expression.	14
2. a)	Draw the block diagram and explain generation of DSB-SC signal using balanced modulator	7
b)	An AM signal $S(t)=20\ [1+0.9\cos 2\pi\times10^4t]\cos 2\pi\times10^6t$ is transmitted in to the free space using an antenna whose resistance is 5Ω. Sketch the spectrum of AM signal and calculate bandwidth, power radiated and modulation efficiency.	7
3.	Develop the expression for the single tone FM signal and derive the expression for bandwidth?	14
4. a)	Explain the balanced slop detector, with necessary circuit diagram.	7
b)	Compare PAM, PWM and PPM modulation schemes?	7
5. a)	Derive the expression for SNR in PCM system.	7
b)	Explain slope overload distortion and granular noise in delta modulation system.	7
6. a)	Illustrate the block diagram of a coherent ASK demodulator.	7
b)	What is meant by ISI in communication system? How it can be minimized.	7
7.	Derive the expression for probability of error of Matched filter receiver.	14
8.	Elucidate the working of Tuned radio frequency (TRF) receiver with its block diagram.	14