KONERU LAKSHMAIAH EDUCATION FOUNDATION
(Deemed to be University, Estd. u/s. 3 of UGC Act 1956)

B.Tech - Odd Sem : End Semester Exam
Academic Year:2020-2021

19EC2105 - Analog and Digital Communication

Set No: 3

Time:		**Max.Marks: 100**					
S.NO	Answer All Questions	Choice	Options	Marks	CO	CO BTL	COI BTL
1.	Illustrate how square law is implemented in generating an AM wave.	choice Q-2		10Marks	CO1	3	1
2.	With the help of circuit, explain modulation & demodulation of PAM signals.			10Marks	CO1	3	1
3.	Answer 3.A & 3.B	choice Q-4		15Marks	CO1	3	1
3.A.	Illustrate the operation of super heterodyne receiver with neat block diagram.			10Marks	CO1	3	2
3.B.	Build the spectrum of AM.			5Marks	CO1	3	2
4.	Answer 4.A & 4.B			15Marks	CO1	3	2
4.A.	In an AM modulator, 500 kHz carrier of amplitude 20V is modulated by 10 kHz modulating signal which causes a change in the output wave of 7.5 V. Solve the following (i) Upper and lower side band frequencies (ii) Modulation Index			8Marks	CO1	3	2
4.B.	For the above problem, solve for (iii) Peak amplitude of upper and lower side frequency (iv) Maximum and minimum amplitudes of envelope.			7Marks	CO1	3	2
5.	Outline the problems that arise in Delta Modulation.	choice Q-6		10Marks	CO2	3	1
6.	Relate the terms dynamic range, resolution, and the number of bits in a PCM code.			10Marks	CO2	3	1
7.	Answer 7.A & 7.B	choice Q-8		15Marks	CO2	3	3
7.A.	Explain the function of PCM transmitter and receiver.			7Marks	CO2	3	2
7.B.	A PCM system uses a uniform quantizer followed by a 7-bit encoder. The system bit rate is 50 Mbits/sec. Solve the equation to find the maximum bandwidth of the message signal for which this system operates satisfactorily.			8Marks	CO2	3	3
8.	Answer 8.A & 8.B			15Marks	CO2	3	3
8.A.	Construct Delta Modulation PCM and standard PCM.			7Marks	CO2	3	2
8.B.	A telephone signal with cut-off frequency of 4 kHz is digitized into 8-bit PCM, sampled at Nyquist rate. Solve the baseband transmission bandwidth and quantization S/N ratio.			8Marks	CO2	3	3
9.	Explain different types of line coding with their advantages and disadvantages.	choice Q-10		10Marks	CO3	3	1
10.	Outline the importance of on SS7 signalling.			10Marks	CO3	3	1
11.	Answer 11.A & 11.B	choice		15Marks	CO3	3	3

		Q-12					
11.A.	Explain about BPSK modulator and demodulator with suitable example.			7Marks	CO3	3	2
11.B.	Assume that we want to transmit the following binary strings: 11010010 & 10101101. Encode the resulting signals using Unipolar NRZ and Unipolar RZ.			8Marks	CO3	3	3
12.	Answer 12.A & 12.B			15Marks	CO3	3	3
12.A.	Develop a model of QAM transmitter and receiver.			10Marks	CO3	3	3
12.B.	Differentiate ASK & PSK systems.			5Marks	CO3	3	2
13.	Analyze CDMA technique in view of wireless communication.	choice Q-14		10Marks	CO4	3	1
14.	Differentiate direct sequence and frequency hop spread spectrum technique.			10Marks	CO4	3	1
15.	Answer 15.A & 15.B	choice Q-16		15Marks	CO4	3	1
15.A.	Build the model of DSSS with coherent binary PSK.			10Marks	CO4	3	2
15.B.	Distinguish VOIP & PSTN.			5Marks	CO4	3	3
16.	Answer 16.A & 16.B			15Marks	CO4	3	3
16.A.	Describe the operating principle of packet switching.			8Marks	CO4	3	3
16.B.	Organize the advantages and disadvantages of FDMA.			7Marks	CO4	3	2

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