

## 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		

11/20/2020

	Q-12				
Explain about BPSK modulator and demodulator with suitable example.		7Marks	CO3	3	2
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
Answer 12.A & 12.B		15Marks	CO3	3	3
Develop a model of QAM transmitter and receiver.		10Marks	CO3	3	3
Differentiate ASK & PSK systems.		5Marks	CO3	3	2
Analyze CDMA technique in view of wireless communication.	choice Q-14	10Marks	CO4	3	1
Differentiate direct sequence and frequency hop spread spectrum technique.		10Marks	CO4	3	1
Answer 15.A & 15.B	choice Q-16	15Marks	CO4	3	1
Build the model of DSSS with coherent binary PSK.		10Marks	CO4	3	2
Distinguish VOIP & PSTN.		5Marks	CO4	3	3
Answer 16.A & 16.B		15Marks	CO4	3	3
Describe the operating principle of packet switching.		8Marks	CO4	3	3
Organize the advantages and disadvantages of FDMA.		7Marks	CO4	3	2
	Explain about BPSK modulator and demodulator with suitable example. Assume that we want to transmit the following binary strings: 11010010 & 10101101. Encode the resulting signals using Unipolar NRZ and Unipolar RZ. Answer 12.A & 12.B Develop a model of QAM transmitter and receiver. Differentiate ASK & PSK systems. Analyze CDMA technique in view of wireless communication. Differentiate direct sequence and frequency hop spread spectrum technique. Answer 15.A & 15.B Build the model of DSSS with coherent binary PSK. Distinguish VOIP & PSTN. Answer 16.A & 16.B Describe the operating principle of packet switching. Organize the advantages and disadvantages of FDMA.	Q-12Explain about BPSK modulator and demodulator with suitable example.Q-12Assume that we want to transmit the following binary strings: 11010010 & 10101101. Encode the resulting signals using Unipolar NRZ and Unipolar RZ.Image: Comparison of QAM transmitter and receiver.Answer 12.A & 12.BImage: Comparison of QAM transmitter and receiver.Image: Comparison of QAM transmitter and receiver.Differentiate ASK & PSK systems.Image: Comparison of QAM transmitter and receiver.Image: Comparison of QAM transmitter and receiver.Differentiate ASK & PSK systems.Image: Comparison of QAM transmitter and receiver.Image: Comparison of QAM transmitter and receiver.Differentiate ASK & PSK systems.Image: Comparison of QAH technique in view of wireless communication.Choice Q-14Differentiate direct sequence and frequency hop spread spectrum technique.Choice Q-16Answer 15.A & 15.BChoice Q-16Build the model of DSSS with coherent binary PSK.Image: Choice Q-16Distinguish VOIP & PSTN.Image: Choice Q-16Answer 16.A & 16.BImage: Choice Q-16Describe the operating principle of packet switching.Image: Choice Q-16Organize the advantages and disadvantages of FDMA.Image: Choice Q-17	Q-12Q-12Explain about BPSK modulator and demodulator with suitable example.7MarksAssume that we want to transmit the following binary strings: 11010010 & 10101101. Encode the resulting signals using Unipolar NRZ and Unipolar RZ.8MarksAnswer 12.A & 12.B15MarksDevelop a model of QAM transmitter and receiver.10MarksDifferentiate ASK & PSK systems.5MarksAnalyze CDMA technique in view of wireless communication.choice Q-14Differentiate direct sequence and frequency hop spread spectrum technique.10MarksAnswer 15.A & 15.Bchoice Q-1615MarksBuild the model of DSSS with coherent binary PSK.10MarksDistinguish VOIP & PSTN.5MarksAnswer 16.A & 16.B15MarksDescribe the operating principle of packet switching.8MarksOrganize the advantages and disadvantages of FDMA.7Marks	Q-12Q-12Explain about BPSK modulator and demodulator with suitable example.7MarksCO3Assume that we want to transmit the following binary strings: 11010010 & 10101101. Encode the resulting signals using Unipolar NRZ and Unipolar RZ.8MarksCO3Answer 12.A & 12.B15MarksCO3Develop a model of QAM transmitter and receiver.10MarksCO3Differentiate ASK & PSK systems.5MarksCO3Analyze CDMA technique in view of wireless communication.choice Q-1410MarksDifferentiate direct sequence and frequency hop spread spectrum technique.10MarksCO4Answer 15.A & 15.Bchoice Q-1615MarksCO4Build the model of DSSS with coherent binary PSK.10MarksCO4Distinguish VOIP & PSTN.5MarksCO4Answer 16.A & 16.B15MarksCO4Organize the advantages and disadvantages of FDMA.7MarksCO4	Q-12Q-12IIExplain about BPSK modulator and demodulator with suitable example.7MarksCO33Assume that we want to transmit the following binary strings: 11010010 & 10101101. Encode the resulting signals using Unipolar NRZ and Unipolar RZ.8MarksCO33Answer 12.A & 12.B15MarksCO33Develop a model of QAM transmitter and receiver.10MarksCO33Differentiate ASK & PSK systems.5MarksCO33Analyze CDMA technique in view of wireless communication.10MarksCO43Differentiate direct sequence and frequency hop spread spectrum technique.10MarksCO43Answer 15.A & 15.BChoice Q-1615MarksCO43Build the model of DSSS with coherent binary PSK.10MarksCO43Distinguish VOIP & PSTN.5MarksCO43Answer 16.A & 16.B15MarksCO43Describe the operating principle of packet switching.8MarksCO43Organize the advantages and disadvantages of FDMA.7MarksCO43

[object HTMLDivElement]