

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VI (NEW) EXAMINATION – WINTER 2018****Subject Code:2161704****Date:27/11/2018****Subject Name:Analog and Digital communication****Time: 02:30 PM TO 05:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

		<b>MARKS</b>
<b>Q.1</b>	(a) Explain adaptive delta modulation.	<b>03</b>
	(b) Define amplitude modulation and modulation index. Derive relation between the output power of an AM transmitter and depth of modulation.	<b>04</b>
	(c) What do you mean by network topology? Explain different types of network topology in detail.	<b>07</b>
<b>Q.2</b>	(a) Draw the block diagram of communication system and explain each block.	<b>03</b>
	(b) Explain DTE and DCE equipments.	<b>04</b>
	(c) Explain in brief different types of noise.	<b>07</b>
<b>OR</b>		
	(c) Describe frequency modulation and give its mathematical representation.	<b>07</b>
<b>Q.3</b>	(a) Explain parity error detection method.	<b>03</b>
	(b) Explain the losses in the fiber optic cable.	<b>04</b>
	(c) Explain bit-oriented protocols.	<b>07</b>
<b>OR</b>		
<b>Q.3</b>	(a) Explain Pulse Code Modulation.	<b>03</b>
	(b) Explain LRC and VRC error detection method along with suitable example.	<b>04</b>
	(c) For a stream of data 11001010001, show the different encoded data formats in UNZ,URZ,BNZ-AMI, BRZ-AMI, Manchester( Biphase ) and Differential Manchester codes	<b>07</b>
<b>Q.4</b>	(a) Explain IEEE 802.6 Metropolitan Area Network.	<b>03</b>
	(b) Explain wireless LANs using CSMA/CA (IEEE 802.11)	<b>04</b>
	(c) Describe OSI Model in detail.	<b>07</b>
<b>OR</b>		
<b>Q.4</b>	(a) Explain Wave Division Multiplexing.	<b>03</b>
	(b) Explain Optical Detector in detail.	<b>04</b>
	(c) Describe RS232C interface standard and draw its null modem configuration.	<b>07</b>
<b>Q.5</b>	(a) Explain IEEE 802.3 Ethernet frame.	<b>03</b>
	(b) Explain QPSK Modem in detail.	<b>04</b>
	(c) Explain Time Division Multiplexing. Also discuss about multichannel TDM system.	<b>07</b>
<b>OR</b>		
<b>Q.5</b>	(a) Explain Microwave communication in detail.	<b>03</b>
	(b) Write a short note on SONET.	<b>04</b>
	(c) Explain different methods of Satellite Communications.	<b>07</b>

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