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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.

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

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