

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE- SEMESTER-VI (NEW) EXAMINATION – WINTER 2020****Subject Code:2161704****Date:27/01/2021****Subject Name:Analog and Digital communication****Time:02:00 PM TO 04:00 PM****Total Marks: 56****Instructions:**

1. Attempt any FOUR questions out of EIGHT questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

		MARKS
<b>Q.1</b>	(a) Give comparison of Amplitude and Frequency modulation.	<b>03</b>
	(b) Define following Terminology: (a) Protocol (b) Network (c) Half Duplex (d) Topology	<b>04</b>
	(c) Explain general communication system with block diagram.	<b>07</b>
<b>Q.2</b>	(a) Draw block diagram of FSK modulator and demodulator.	<b>03</b>
	(b) Define sampling theorem. What is the range of frequency in AM, FM band.	<b>04</b>
	(c) Derive equation of sinusoidal AM and draw AM spectrum for $AM=1$ , $AM>1$ , $AM<1$ .	<b>07</b>
<b>Q.3</b>	(a) Give classification of Noise.	<b>03</b>
	(b) State importance of modulation and enlist various types of modulation technique.	<b>04</b>
	(c) List various types of error detection and correction method. Describe any one in details.	<b>07</b>
<b>Q.4</b>	(a) Enlist working principal of fiber optics.	<b>03</b>
	(b) Draw and explain QPSK modulator.	<b>04</b>
	(c) Briefly describe OSI model architecture.	<b>07</b>
<b>Q.5</b>	(a) List and sketch various Data Topologies.	<b>03</b>
	(b) Draw and Explain adaptive delta modulator.	<b>04</b>
	(c) Explain Data Link Layer Protocols.	<b>07</b>
<b>Q.6</b>	(a) What was the purpose for forming the IEEE 802 committee?	<b>03</b>
	(b) Write a note on quantization.	<b>04</b>
	(c) Explain GEO, LEO and MEO satellites.	<b>07</b>
<b>Q.7</b>	(a) Define the BIT-oriented protocols and draw HDLC frame.	<b>03</b>
	(b) Explain RS -232 interface standards.	<b>04</b>
	(c) Explain X.25 packet switch protocol.	<b>07</b>
<b>Q.8</b>	(a) Explain application of microwave communication in brief.	<b>03</b>
	(b) Discuss advantages and disadvantages of communication using optical fiber.	<b>04</b>
	(c) Describe SONET topology and its frame.	<b>07</b>

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