

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VI(NEW) – EXAMINATION – SUMMER 2019****Subject Code:2161704****Date:16/05/2019****Subject Name:Analog and Digital communication****Time:10:30 AM TO 01:00 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) Give Classification of Noise.	03
	(b) Explain Sampling Theorem. Define Range of Frequencies in AM and FM.	04
	(c) Describe OSI Model Architecture in detail.	07
Q.2	(a) Define Modulation and Classify various modulation techniques.	03
	(b) Explain Adaptive Delta Modulation.	04
	(c) List various types of error detection and correction methods.	07
	OR	
	(c) What is the function of modulator? Explain balance modulator with its diagram.	07
Q.3	(a) Explain working principle of fiber optics.	03
	(b) Derive the formula for instantaneous value of FM voltage and define the modulation index.	04
	(c) Define Noise Figure and explain noise figure calculation.	07
	OR	
Q.3	(a) Explain importance of DTE and DCE in Data Communication.	03
	(b) Explain wave division multiplexing in Fiber.	04
	(c) List Digital Modulation Techniques. Explain ASK and PSK in Detail.	07
Q.4	(a) Draw System Network Architecture and explain Function of SNA.	03
	(b) Compare RS 422 and RS 423 Interface Standards.	04
	(c) Explain IEEE 802.5 Token Ring.	07
	OR	
Q.4	(a) Compare Amplitude Modulation and Frequency Modulation.	03
	(b) What is the difference between synchronous and asynchronous transmission?	04
	(c) Explain Pulse Code Modulation in detail.	07
Q.5	(a) List and Draw different DATA Topologies.	03
	(b) Compare Metropolitan Area Network and Local Area Network.	04
	(c) List different Pulse Modulation Techniques. Explain PWM in detail.	07
	OR	
Q.5	(a) Derive Equation of Power of Amplitude Modulation Wave.	03
	(b) Explain Data Link Layer Protocol in brief.	04
	(c) Define Multiplexing and Demultiplexing. List types of Multiplexing. Explain FDM with diagram, its advantages and disadvantages	07
