

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI(NEW) EXAMINATION – WINTER 2022****Subject Code:2161704****Date:15-12-2022****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.
4. Simple and non-programmable scientific calculators are allowed.

		MARKS
Q.1	(a) Draw the block diagram of communication system and explain any one block.	03
	(b) Define-noise. Given example of internal noise and external noise.	04
	(c) Describe OSI Model Architecture in detail.	07
Q.2	(a) Define quantization and its types.	03
	(b) Define Bandwidth. Explain bandwidth requirement in brief.	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 Pulse Code Modulation	03
	(b) Compare Amplitude and frequency modulation.	04
	(c) Define Noise Figure and explain noise figure calculation	07
OR		
Q.3	(a) Define following Terminology: (i) Protocol (ii) Baud Rate (iii) Half Duplex	03
	(b) Explain DTE and DCE equipments.	04
	(c) List out various modulation techniques for digital modulation. Explain any two in detail.	07
Q.4	(a) Define sampling theorem. What is the range of frequency in AM, FM band.	03
	(b) What are the various types of serial interface? Explain RS232 in details.	04
	(c) What do you mean by network topology? Explain different types of network topology in detail	07
OR		
Q.4	(a) Explain Wave Division Multiplexing	03
	(b) Explain QPSK Modem in detail	04
	(c) Describe frequency modulation and give its mathematical representation	07
Q.5	(a) Given main advantages of wireless communication.	03
	(b) Explain various types of losses in fiber optics	04
	(c) Describe advantage of fiber optic over co axial cable. Enlist fiber optic detector and explain any two in details.	07
OR		
Q.5	(a) Given the merit of fiber optic communication.	03
	(b) Explain microwave communication in brief.	04

(c) Explain different methods of Satellite Communications

07
