Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE – SEMESTER – VI (NEW).EXAMINATION – WINTER 2016

Subject Code: 2162410 **Date: 26/10/2016**

Subject Name: Industrial Communication System

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.**

Q.1	**(a)**	Draw the block diagram of Fiber Optics Communication (FOC) system and explain it. Also list down the benefits of FOC.	**07**
	(b)	Draw the amplitude modulated waveforms for less than 100%, with 100% modulation.	**03**
	(c)	Define Modulation Index. A 20kW carrier wave is amplitude modulated at 80% depth of modulation by a sinusoidal modulating signal. Calculate the total power of the AM wave.	**04**
Q.2	**(a)**	Compare the ASK, FSK and PSK in all aspects.	**07**
	(b)	Explain the UART transmitter and receiver with the help of block diagram.	**07**
		OR	
	(b)	Explain PWM in detail.	**07**
Q.3	**(a)**	Define asynchronous system. Explain the transmission characteristic in detail.	**07**
	(b)	Write a note on:-USB.	**07**
		OR	
Q.3	**(a)**	Sketch the transmitted sequence of pulses for each of the following terms: UNRZ, URZ, PRZ, BRZ & Manchester Coding. Sequence of pulses: 01101000111110	**07**
	(b)	Explain the RS-485 interface standard in detail and draw the typical two-wire multidrop network.	**07**
Q.4	**(a)**	Define noise. Explain Thermal-Agitation noise and Shot noise in detail.	**07**
	(b)	Explain in detail HART protocol.	**07**
		OR	
Q.4	**(a)**	Write a technical note on Suppression techniques.	**07**
	(b)	List the benefits of FIELDBUS and DEVICE NET system. Describe three network classes of FIELDBUS and DEVICE NET system.	**07**
Q.5	**(a)**	Write a detailed note on: satellite communication.	**07**
	(b)	Explain Synchronous and asynchronous system in detail.	**07**
		OR	
Q.5	**(a)**	Explain in detail cellular digital packet network.	**07**
	(b)	What is the protocol? Explain TCP/IP.	**07**

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