## **GUJARAT TECHNOLOGICAL UNIVERSITY** BE - SEMESTER-VI • EXAMINATION – WINTER 2013

Subject Code: 161704         Date: 06-12-20			
Subject Name: Analog and Digital Communication Time: 02:30 pm to 05:00 pm Total Marks: ' Instructions:			
<ol> <li>Attempt all questions.</li> <li>Make suitable assumptions wherever necessary.</li> <li>Figures to the right indicate full marks.</li> </ol>			
Q.1	(a) (b)	Explain need for modulation with suitable example. Describe system network architecture and basic SNA network.	07 07
Q.2	(a) (b)	Explain about RS 422 and RS 423 interface standards. Classify noise and explain extraterrestrial noise in detail. <b>OR</b>	07 07
	(b)	An amplifier operating over the frequency range from 10 MHz to 12 MHz has a 1 K $\Omega$ input resistor. Using thermal agitation noise formula find rms noise voltage at the input to this amplifier if the ambient temperature is 27°C. Boltzmann's constant k=1.38 x 10 <sup>-23</sup> J/K.	07
Q.3	(a) (b)	Discuss frequency spectrum of the AM wave. Mention data terminal and data communication equipments.	07 07
Q.3	(a) (b)	Discuss frequency spectrum of the FM wave. Write a note on noise triangle with reference to FM.	07 07
Q.4	(a)	Introduce pulse width modulation. With neat sketch explain generation and demodulation of PWM.	07
	<b>(b)</b>	Brief about bit-error rate tester and error-free second test box. OR	07
Q.4	(a) (b)	Explain in brief about GEO, LEO and MEO satellites. Write short note on fiber-cable losses.	07 07
Q.5	(a) (b)	Describe about IEEE 802.3 physical layer. Discuss about SDLC and HDLC bit-oriented protocols.	07 07
Q.5	(a) (b)	Briefly explain digital T carriers. Give comparison between amplitude modulation, frequency modulation and phase modulation.	07 07

\*\*\*\*\*