

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

Subject Code: 161704**Date: 06-12-2013****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.

- Q.1** (a) Explain need for modulation with suitable example. **07**
(b) Describe system network architecture and basic SNA network. **07**
- Q.2** (a) Explain about RS 422 and RS 423 interface standards. **07**
(b) Classify noise and explain extraterrestrial noise in detail. **07**
- OR**
- (b) An amplifier operating over the frequency range from 10 MHz to 12 MHz has a 1 K Ω 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 $k=1.38 \times 10^{-23}$ J/K. **07**
- Q.3** (a) Discuss frequency spectrum of the AM wave. **07**
(b) Mention data terminal and data communication equipments. **07**
- OR**
- Q.3** (a) Discuss frequency spectrum of the FM wave. **07**
(b) Write a note on noise triangle with reference to FM. **07**
- Q.4** (a) Introduce pulse width modulation. With neat sketch explain generation and demodulation of PWM. **07**
(b) Brief about bit-error rate tester and error-free second test box. **07**
- OR**
- Q.4** (a) Explain in brief about GEO, LEO and MEO satellites. **07**
(b) Write short note on fiber-cable losses. **07**
- Q.5** (a) Describe about IEEE 802.3 physical layer. **07**
(b) Discuss about SDLC and HDLC bit-oriented protocols. **07**
- OR**
- Q.5** (a) Briefly explain digital T carriers. **07**
(b) Give comparison between amplitude modulation, frequency modulation and phase modulation. **07**
