

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-IV • EXAMINATION – SUMMER • 2014

Subject Code: 141601**Date: 16-06-2014****Subject Name: Data Communication and Networking****Time: 10:30 am - 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 layered architecture of OSI model and explain the function of each layer of OSI model. **07**
(b) Explain LAN, MAN in detail. **07**
- Q.2** (a) What do you mean topology? Explain bus and star topology. **07**
(b) Identify the five components of data communication system. Differentiate between half duplex and full duplex transmission modes. **07**
- OR**
- (b) Explain TCP/IP model in detail. **07**
- Q.3** (a) Explain Amplitude shift keying, Frequency shift keying and Phase shift keying for digital to analog conversion. **07**
(b) What are different transmission impairments? Differentiate between Circuit switched network and Packet switched network. **07**
- OR**
- Q.3** (a) Explain Analog Modulation, Frequency Modulation for analog to analog conversion. **07**
(b) What is Multiplexing? Explain Time division multiplexing and Frequency division multiplexing. **07**
- Q.4** (a) Explain CRC with example. **07**
(b) What is routing algorithm? List different types of routing algorithm. Explain distance vector routing algorithm with example. **07**
- OR**
- Q.4** (a) What should be minimum hamming distance to detect two bit error? Explain hamming code method for error correction with example. **07**
(b) How do guided media differ from unguided media? Explain guided media in detail. **07**
- Q.5** (a) Explain FDDI and Token bus in detail. **07**
(b) Explain following connecting devices. **07**
1) Hub 2) Link layer switches 3) Router
- OR**
- Q.5** (a) List different kinds of Line coding schemes. Explain any two in detail. **07**
(b) Explain Shannon capacity and Nyquist theorem with example. **07**
