

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- IVth SEMESTER-EXAMINATION – MAY/JUNE- 2012****Subject code: 141601****Date: 23/05/2012****Subject Name: Data Communication & 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) List out different types of methods for digital-to-digital conversion. Explain all methods under polar scheme with example. **07**
- (b) Explain Link State Routing with example. **07**
- Q.2** (a) Explain functions of different layers of OSI model in detail with diagram. **07**
- (b) Explain different transmission modes with example. Explain with diagram tree and mesh topology and list out advantages and disadvantages. **07**
- OR**
- (b) Write a short note on Frequency Division Multiplexing. **07**
- Q.3** (a) Explain the following **07**
- 1) Analog-to-Digital Conversion 2) Terrestrial Microwave
- (b) Write short note on the following **07**
- 1) Checksum with example 2) RSA
- OR**
- Q.3** (a) Explain the following **07**
- 1) Effect of noise in twisted pair cable and coaxial cable.
- 2) CSMA/CD
- (b) Write short note on the following **07**
- 1) Repeater 2) Throughput 3) Attenuation
- Q.4** (a) Explain the function of DTE and DCE with example. Explain Null Modem in detail with diagram. **07**
- (b) Write a short note on the following. **07**
- 1) Token Bus 2) FDDI
- OR**
- Q.4** (a) Types of Radio Wave Propagation with diagram **07**
- (b) List and explain different connecting devices in detail. **07**
- Q.5** (a) Explain FSK and 8QAM and draw 8QAM (2 Amplitude and 4phase) waveform and constellation diagram for the data stream 10111001110. **07**
- (b) Given a bandwidth of 6000Hz. Calculate baud rate and bit rate for ASK, PSK and 8-PSK. **07**
- OR**
- Q.5** (a) Explain Hamming code method. The code 11110101101 was received using the hamming encoding algorithm, what is the original code? **07**
- (b) Explain ASK and 16QAM and draw 16QAM (2 Amplitude and 8phase) waveform and constellation diagram for the data stream 10111001110. **07**
