

GUJARAT TECHNOLOGICAL UNIVERSITY**BE SEM-IV Examination-Nov/Dec-2011****Subject code: 141601****Date: 25/11/2011****Subject Name: Data Communication & Networking****Time: 02.30 pm -5.00 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 TCP/IP Protocol suite in detail. **07**
(b) What is network topology? Explain different network topologies with example and compare them. **07**
- Q.2** (a) What are the differences between a port address, a logical address, and a physical address? **03**
(b) Explain the transmission impairments. **04**
(c) What is line coding? List various line coding schemes and explain three of them in detail. **07**
- OR**
- (c) Explain the following.
(i) Composite signals. **04**
(ii) Transmission Modes. **03**
- Q.3** (a) List and explain the two basic types of ISDN services. Describe channel capacity in B-channel and D-channel and its applications. **07**
(b) What is a cable TV network? Explain cable modem in detail. **07**
- OR**
- Q.3** (a) Explain the following. **07**
(i) Pulse code modulation (ii). Wavelength division multiplexing
(b) Explain cyclic redundancy check in detail. **07**
- Q.4** (a) Explain the categories of standard Ethernet implementations. **07**
(b) Explain link state routing with example. **07**
- OR**
- Q.4** (a) Differentiate between the following. **07**
(i) Hub and Repeater.
(ii) Router and Gateways.
(b) Explain Distance Vector Routing algorithm in detail. **07**
- Q.5** (a) Explain the following LANs: **07**
(i) Token Ring (ii) Token Bus
(b) What is the purpose of 'Hamming Code'? How the redundant bits are computed for a data unit of m-bits? **07**
- OR**
- Q.5** (a) Explain the duties of Presentation and Application network layers. **03**
(b) Discuss File Transfer Protocol in detail. **04**
(c) Explain ALOHA and Slotted ALOHA protocols. **07**
