

GUJARAT TECHNOLOGICAL UNIVERSITY**B. E. Semester-IV- Examination June- 2011****Subject code: 141601****Subject Name: Data Communication and Networking****Date:06/06/2011****Time : 10:30 am to 1:00 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) (I) Explain STAR, BUS and RING Topology in detail. **03**
 (II) Compare Packet Switching and Circuit Switching. **04**
 (b) Explain the functional diagram of MODEM. Explain synchronous & asynchronous MODEM in detail. **07**
- Q.2** (a) (I) What is PSTN ? **04**
 (II) Describe HUB, SWITCH & ROUTER in detail. **03**
 (b) Compare OSI reference model with TCP/IP reference model. **07**
- OR**
- (b) Explain in detail the classification of transmission media. **07**
- Q.3** (a) Explain in detail Broadband Transmission with modulation of digital signal. **07**
 (b) What is Data Correction and Detection Code. Explain any two with suitable Example. **07**
- OR**
- Q.3** (a) (I) Compare FDM, WDM, TDM. **03**
 (II) Explain CRC with suitable example. **04**
 (b) (I) Explain Token Ring. **03**
 (II) Describe Bit interval, Bit rate, Bauds in details **04**
- Q.4** (a) (I) Compare Twisted pair, Co-Axial and Optical Fiber Cable. **05**
 (II) Name any Four protocol with its use **02**
 (b) Explain TDM System with its advantages & disadvantages. **07**
- OR**
- Q.4** (a) (I) Explain LAN, WAN and MAN. **03**
 (II) Explain DTE – DCE Interface. **04**
 (b) Explain the task of Transport Layer and Session Layer. **07**
- Q.5** (a) Explain transmission impairments in detail. Also explain types of errors in the data communication. **07**
 (b) Differentiate distance vector and link state routing algorithm. **07**
- OR**
- Q.5** (a) (I) Explain synchronous & asynchronous MODEM in detail. **03**
 (II) What is Shannon capacity explain in brief. **04**
 (b) (I) Explain different modes of fiber optics. **03**
 (II) Explain 56k MODEM in detail. **04**
