

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VIII • EXAMINATION – SUMMER 2014****Subject Code: 181101****Date: 03-06-2014****Subject Name: Data Communication and Networking****Time: 10:30 am TO 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)** What is network topology? Explain different network topologies with example and compare them. **07**
- (b)** (I) Which of the OSI layers handles each of the following : **04**
- Determine which route through the subnet to use.
 - Dividing the transmitted bit stream into frames.
 - Encryption and compression of the information.
 - Flow control between source and destination node.
- (II) Compare Packet Switching and Circuit Switching. **03**
- Q.2 (a)** Explain ATM Reference Model in detail. **07**
- (b)** (I) Explain the terms : LAN , MAN ,WAN , Internet . **04**
- (II) Compare X.25 and Frame Relay. **03**
- OR
- (b)** (I) Explain cyclic redundancy check in detail. **04**
- (II) Compare FDM,WDM and TDM. **03**
- Q.3 (a)** Write the functions of Media Access Control sub layer. And Compare pure ALOHA and slotted ALOHA. **07**
- (b)** Explain Sliding window protocol using GO back to N. **07**
- OR
- Q.3 (a)** Differentiate between the following **07**
- (I) Active hub, Passive hub and Repeater. (II) Router and Gateways.
- (b)** Why CSMA/CA is used for wireless network? Explain it. **07**
- Q.4 (a)** Explain and compare distance vector routing and link state routing algorithm. **07**
- (b)** List the various duties of the transport layer and explain each in brief. Compare UDP and TCP **07**
- OR
- Q.4 (a)** Write about elements of transport layer (1) connection establishment (2) connection release **07**
- (b)** Draw IPV4 header format and explain the each field of the header. Also explain the concept of fragmentation in detail. **07**
- Q.5 (a)** Explain DNS in detail with example. **07**
- (b)** Answer the following questions. (I) RSA algorithm. (II) Transposition cipher. **04+03**
- OR
- Q.5 (a)** Answer the following questions. (I) FTP (II) HTTP **04+03**
- (b)** Explain the e-mail architecture and services. Write short note on POP3 and SMTP. **07**
