

**Advanced Diploma in Information Technology (ADIT) /
Bachelor in Information Technology (BIT)**

Term-End Examination

December, 2006

**CST-202 : DATA COMMUNICATION AND COMPUTER
NETWORKING**

Time : 3 Hours

Maximum Marks : 75

Note : *There are **two** Sections in this paper. All questions from Section A are **compulsory**. Answer any **three** questions from Section B. All multiple choice questions carry one mark each.*

SECTION A

1. IEEE _____ standard is for 1-persistent CSMA/CD LAN.
(a) 802.2 (b) 802.3
(c) 802.4 (d) 802.5

2. Which of the following multiplexing is used when useful bandwidth of medium exceeds the required bandwidth of signals to be transmitted ?
(a) Statistical Time Division Multiplexing (STDM)
(b) FDM
(c) TDM
(d) Both FDM and TDM

3. ASK is rarely used. Why ?
(a) Because it shifts only between 'ON' and 'OFF' states
(b) Because it takes amplitude only
(c) Because it is highly susceptible to noise
(d) Because it is an old technology

4. Which of the following cabling schemes offers easy maintenance ?
(a) 10 Base 2 (b) 10 Base 5
(c) 10 Base F (d) 10 Base T

5. Which of the following is **not** included in the static routing algorithms ?
- (a) Flooding
 - (b) Distance vector routing
 - (c) Flow based routing
 - (d) Shortest path routing
6. IEEE 802.3 frames contain _____ fields.
- (a) five
 - (b) six
 - (c) seven
 - (d) four
7. An ISDN B channel has a capacity of
- (a) 56 kbps
 - (b) 64 kbps
 - (c) 128 kbps
 - (d) 96 kbps
8. Flow Control in OSI model is done by _____ layer.
- (a) Network
 - (b) Transport
 - (c) Application
 - (d) Presentation
9. An advanced TDM system for fiber optics is known as _____ .
- (a) FDDI
 - (b) SDDI
 - (c) SONET
 - (d) FTDM
10. In QAM both _____ and amplitude of the signal changes.
- (a) Frequency
 - (b) Time
 - (c) Phase
 - (d) Quantity

11. (a) Write any **three** differences between each of the following :
- (i) Ring and Bus topology
 - (ii) Network layer in OSI model and Internet layer of TCP/IP
 - (iii) Time Division Multiplexing and Frequency Division Multiplexing
 - (iv) Token Passing and Polling System
 - (v) Twisted pair and Base Band coaxial cable
- (b) What are the different nodes defined by FDDI ? Explain the purpose of each.

SECTION B

Answer any **three** questions from this Section.

12. (a) What is LAN ? How does it differ from MANs and WANs ? List and explain different topologies and transmission media used in LAN.
- (b) How does X.25 manage the connections between a pair of DTEs ? Explain three phases of an X.25 connection establishment with the help of a diagram.
13. Answer the following questions in brief : 3×5=15
- (a) Why is circuit switching preferred over packet switching in voice communication ?
 - (b) What is the difference between the 'flow control of data link layer' and the 'flow control of transport layer' ?
 - (c) How do devices use ARP tables to send data ?
 - (d) Explain the priority management scheme in a token ring LAN.
 - (e) Compare optical fiber and UTP with respect to cost, speed and security.
14. (a) What are the differences between 10 Base 5 and 10 Base 2 ? Explain 10 Base T standard. Also give its applications and relative performance over 10 Base 5 and 10 Base 2.
- (b) What is meant by congestion ? How can congestion create problems in network communication ? Also, explain any three causes for occurrence of congestion.
15. (a) What are the differences between service and protocol ? Explain the different connection-oriented and connection-less services with the help of an example for each.
- (b) How does MODEM work ? Explain any five functions of MODEMs.