

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

Term-End Examination

December, 2007

**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. In which of the following networks, are reassembly buffers required ? 1
 - (a) Circuit switched network
 - (b) Message switched network
 - (c) Packet switched network
 - (d) None of the above

2. Two binary values are represented by two different frequencies in 1
 - (a) ASK
 - (b) PSK
 - (c) QPSK
 - (d) FSK

3. Primary rate of ISDN system is 1
 - (a) $2B + 2C$
 - (b) $2B + 1D$
 - (c) $23B + 1D$
 - (d) $23B + 1C$

4. How many time registers are defined by FDDI ? 1
 - (a) Two
 - (b) Three
 - (c) Four
 - (d) Five

5. In TCP header, data offset field, identifies the _____ of the data. 1
- (a) Urgent pointer
 - (b) Start
 - (c) End
 - (d) Sequence number
6. FDDI belongs to which of the following topologies. 1
- (a) Star
 - (b) Mesh
 - (c) Ring
 - (d) Bus
7. What is the measure (unit) used to represent signalling rate per second ? 1
- (a) Bps
 - (b) Hz
 - (c) Baud
 - (d) Kbps
8. X.21 protocol consists of 1
- (a) physical and frame levels
 - (b) only physical level
 - (c) physical, frame and packet levels
 - (d) frame and packet levels
9. An internetworking device operating at the transport layer is called a 1
- (a) Router
 - (b) Gateway
 - (c) Bridge
 - (d) Repeater
10. The 10 Base T scheme can support segment upto 1
- (a) 200 meters
 - (b) 50 meters
 - (c) 100 meters
 - (d) 500 meters

- 11. (a)** Write any three differences between each of the following : 15
- (i) Router and Gateway
 - (ii) Single mode optical fiber and Multimode optical fiber
 - (iii) MAC layer and LLC layer
 - (iv) OSI networking model and TCP/IP networking model
 - (v) Client/Server and Peer-to-Peer architecture
- (b)** What is multiplexing ? What are the different types of multiplexing ? Explain. 5

SECTION B

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

12. Explain the token passing technologies used in FDDI. How are new tokens generated on an FDDI network ? What advantages does this method have when adding and deleting stations to/from the network or when error occurs ? 15
13. Answer the following questions in brief : 15
- (a) Explain the TCP/IP addressing mechanism.
 - (b) Explain the characteristics of wireless media.
 - (c) How does Pulse Code Modulation work ?
 - (d) What are the features of MAC layer protocol ?
 - (e) Differentiate between analog and digital systems.
14. (a) How does CSMA/CD work ? Explain in detail the frame format of CSMA/CD. 8
- (b) Explain the working of token bus network with the help of a suitable diagram. What happens if a token is lost or a duplicate token appears on the network ? 7
15. (a) Give three situations where congestion can occur in a network. How does congestion have bad effects on a network ? What are the different techniques which designers can use for congestion avoidance ? Explain. 10
- (b) Explain the mechanism of light propagation in the fibre optics with the help of optical fibre structure. Also write any three differences between single mode fibre and multimode fibre. 5