JUNE 2008

Code: DE21/DC11   **Subject: DATA COMMUNICATION & NETWORKS**

3 Hours   **Max. Marks: 100**

NOTE: There are 9 Questions in all.

- **Question 1 is compulsory and carries 20 marks. Answer to Q. 1. must be written in the space provided for it in the answer book supplied and nowhere else.**
- **Out of the remaining EIGHT Questions answer any FIVE Questions. Each question carries 16 marks.**
- **Any required data not explicitly given, may be suitably assumed and stated.**

Q.1   **Choose the correct or the best alternative in the following:**   **(2x10)**

a.   How many IP classes are present?

(A) 6   (B) 3
(C) 4   (D) 5

b.   LAN is generally used to connect computers in

(A) Campus   (B) Country
(C) Continent   (D) City

c.   In virtual LAN all computers are connected

(A) Virtually   (B) Physically
(C) Logically   (D) None of these

d.   Network Layer is used for

(A) Synchronization   (B) Congestion control
(C) Flow Control   (D) Token Management

e.   Which layer breaks the data into frames?

(A) Transport   (B) Presentation
(C) Physical   (D) Data link layer

f.   The transmission mode which allow both communicating devices to transmit and receive data simultaneously is

(A) Simplex   (B) Full-duplex
(C) Half-duplex   (D) None of these

g.   Which media does not come under the guided media?

(A) Fiber Optics   (B) Coaxial Cable
(C) Microwave   (D) Twisted Pair

h. Frames are packaged into packets at _____ layer of the OSI middle.

(A) Network Layer   (B) Transport
(C) Physical   (D) Presentation

i. A public switched telephone network (PSTN) uses _____ switching technique

(A) Packet   (B) Message
(C) Circuit   (D) None of these

j. Which of the following cables support the highest bandwidth and faster transmission rate?

(A) Twisted pair cable   (B) Coaxial cable
(C) Open wire cable   (D) Fiber optic cable

Answer any FIVE Questions out of EIGHT Questions.
Each question carries 16 marks.

Q.2 a. If the data link layer can detect errors between hops, why do you think we need another checking mechanism at the transport layer?   **(8)**

b. Explain various types of addressing concepts used in OSI model.   **(4)**

c. Name the two major categories of transmission media.   **(4)**

Q.3 a. Explain the reference Models OSI and TCP/IP. Also discuss in which manner they differ from each other.   **(6)**

b. Discuss the design issues of Data link and Network layer.   **(5)**

c. Compare FDM and TDM in details.   **(5)**

Q.4 a. What is meant by Flow Control? Which layer of OSI Model takes care about it?   **(5)**

b. What do you mean by Routing? Explain how it is useful networking?   **(5)**

c. Explain LAN standards.   **(6)**

Q.5 a. Consider an extremely noisy channel in which the value of the signal-to-noise ratio is almost zero. In other words, the noise is so strong that the signal is faint. For this channel calculate channel capacity.   **(4)**

b. Distinguish between User Datagram Protocol and Transmission Control Protocol.   **(8)**

c. Write an application of Circuit switching?   **(4)**

Q.6 a. Explain mechanisms of congestion control.   **(6)**

b. What are the different classes of IP addresses?   **(4)**

c. What methods are implemented to control error in data link layer? **(6)**

Q.7 a. How is HTTP similar to SMTP?   **(6)**

b. Name the common three components of a browser.   **(5)**

c. List five function of SNMP.   **(5)**

Q.8 a. Explain X.25 and discuss its relation with Frame relay.   **(6)**

b. Give the basic idea to improve the quality of networking.   **(6)**

c. Explain token Passing Mechanism in detail?   **(4)**

Q.9   Write short notes on the following: **(16)**

(i) IP Multicasting
(ii) Wireless LANs
(iii) Transmission Impairments
(iv) Broadband ISDN