DipIETE – ET/CS (OLD SCHEME)

Code: DE21/DC11 **Subject: DATA COMMUNICATION & NETWORKS**
Time: 3 Hours **Max. Marks: 100**

JUNE 2009

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: **(2 × 10)**

a. Which layer is present in TCP/IP model which is also present in OSI MODEL?

(A) Transport **(B)** Application
(C) Session **(D)** Network

b. The main work of transport layer is

(A) Flow control **(B)** Token management
(C) Synchronization **(D)** Congestion control

c. Multicasting is supported by _____ IP address.

(A) Class A **(B)** Class B
(C) Class D **(D)** Class C

d. An IPv4 address is of

(A) 32 bit **(B)** 64 bits
(C) 16 bit **(D)** 48 bits

e. Ethernet is a

(A) Connecting device **(B)** Method
(C) Process **(D)** Technology

f. In LAN all computers are connected

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

g. MIME is used for

(A) Sending address **(B)** Sending header
(C) Sending non ASCII data **(D)** Sending mail

h. The number of layers present in OSI model are

(A) 6 **(B)** 7
(C) 5 **(D)** 4

i. The UDP header is of

(A) 32 bits **(B)** 64 bits
(C) 16 bits **(D)** 48 bits

j. The layer that handles error detection and error correction is

(A) Presentation layer **(B)** Network layer
(C) Transport layer **(D)** Session layer

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

Q.2 a. Differentiate **(10)**
(i) Analog Transmission and Digital Transmission.
(ii) Asynchronous Transmission and Synchronous Transmission
(iii) FDM and TDM
(iv) DTE and DCE
(v) Bit rate and Baud rate

b. What are the different transmission media which data communication equipment can provide service? **(6)**

Q.3 a. Explain Layered Architecture of OSI reference model. Explain protocols used in each layer. **(8)**

b. How can frame relay frameset mapped to ATM cells? **(8)**

Q.4 a. Which one out of TCP/IP and OSI are more popular and widely developed, why? **(8)**

b. How do you decide whether we use a bridge or a repeater? How many repeaters may be put on an Ethernet? **(8)**

Q.5 a. Explain stop and wait flow control protocol with the help of an example. **(8)**

b. We send a digital signal from one station on a LAN to another station. Is this baseband or broadband transmission? Explain. **(8)**

Q.6 a. What are the two approaches to Packet-Switching? **(5)**

b. Discuss congestion policy in Transmission Control Protocol. **(5)**

c. How congestion can be avoided by using Frame Relay. **(6)**

Q.7 a. What is the format of X.25 packet? Also explain how it will save bandwidth in comparison to circuit switching network. **(8)**

b. With neat block diagram of Transmitter and Receiver, describe synchronous TDM system and compare it with statistical TDM system. **(8)**

Q.8 a. Explain, how HTTP and www are related to Internet. **(6)**

b. Define ISDN and give the example of bearer services and Teleservices related to an ISDN. **(6)**

c. Write short note on IPv6. **(4)**

Q.9 a. Discuss the concept of IP Multicasting? How it is useful for internetworking? **(8)**

b. Write short notes on SNMP and e-mail. **(8)**