(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 2727 Roll No.

B.Tech.

(SEM. VII) ODD SEMESTER THEORY EXAMINATION 2013-14

DATA COMMUNICATION NETWORKS

Time : 3 Hours *Total Marks : 100*

Note :– Attempt **all** questions. Each question carries equal marks.

1. Attempt any **four** parts of the following :

   (a) Discuss various performance parameters of data communication networks.

   (b) Differentiate between circuit switching and packet switching.

   (c) What is line coding technique ? Explain and compare performance of different line coding techniques.

   (d) Classify data communication networks by scales.

   (e) What are various IEEE standards used for Networking ? Explain IEEE standard 802 for LAN.

   (f) What are broadcast Networks ? Explain the working advantages and disadvantages of slotted ALOHA.

2. Attempt any **four** parts of the following :

(a) What do you understand by error control network architecture ? Also describe the elements of flow control.

(b) Explain working of Point to Point Protocol.

(c) What is Fixed Routing ? What are the advantages and disadvantages of adaptive routing ?

(d) Which protocol is used to transport Internet messages ? With relevant example explain the working of virtual circuit networks.

(e) What do you understand by framing ? Explain in detail.

(f) What are major problems in allocating the channel ?

3. Attempt any **two** parts of the following :

(a) How do we say collision detection in analog process ? Why do we prefer CSMA over ALOHA ?

(b) What is Fixed Routing ? Discuss the functions of bridges, routers and gateways.

(c) What do you understand by address resolution ? Determine the contents of the first byte of an IP header if the IP protocol is IPv4 and header has eight bytes of option.

4. Attempt any **two** parts of the following :

(a) Explain infrastructure of Internet in detail. Compare TCP/IP and OSI reference model.

(b) What do you understand by Multiplexing ? Explain use of Multiplexing in the context of a transport protocol.

(c) What is the use of Bit stuffing in data ? Explain features of pipelining with suitable diagrams.

5. Attempt any **two** parts of the following :

(a) What are the main characteristics of DNS ? Explain the functions of HTTP.

(b) What do you understand by ATM ? Explain cell header format in ATM and briefly describe the four service classes of ATM.

(c) What is Cryptography ? Differentiate between symmetric key cryptography and asymmetric key cryptography.