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

PAPER ID : 2897 Roll No. | | | | | | | | | | |

B.Tech.

(SEM. VIII) EVEN THEORY EXAMINATION 2012-13

DATA COMMUNICATION NETWORKS

Time : 3 Hours *Total Marks : 100*

Note :– (1) All questions carry equal marks.

(2) Attempt **all** questions.

1. Attempt any **four** of the following : **(5×4=20)**

   (a) Discuss salient features of OSI reference model.

   (b) Distinguish between signal element and a data element.

   (c) What do you understand by de jure and de facto standard ?

   (d) What are the limitations of EIA RS-232 C and in which configuration it is removed.

   (e) Why do we use Layered protocol. Give at least two reasons.

   (f) What are the various LAN topologies ? Explain in brief with figures.

2. Attempt any **four** of the following : **(5×4=20)**

   (a) What is the mechanism of stop-and-wait ARQ error control ?

   (b) Define and explain the data link layer in IEEE project 802. Why is this layer divided into sub layers ?

(c) What is the difference between pure ALOHA and slotted ALOHA ?

(d) Calculate CRC for the 10 bit sequence 1010011110. Where the generator polynomial is $x^3 + x + 1$.

(e) Compare and contrast byte-stuffing and bit stuffing. Which technique is used in byte oriented protocol ?

(f) Briefly describe the services provided by data link layer.

3. Attempt any **four** of the following : **(5×4=20)**

(a) Explain in detail the Dijsktra's algorithm for shortest path with the help of suitable diagram.

(b) Define classless inter domain routing.

(c) Describe the characteristics of a layer 3 switch.

(d) What are the differences between a router and gateway.

(e) Compare and describe different generations of Ethernet used in wired lan.

(f) What do you understand with congestion ? Explain Leaky bucket algorithm.

4. Attempt any **two** of the following : **(10×2=20)**

(a) What is the difference between networking and internetworking connectivity devices ? Explain with example in detail.

(b) Describe ATM protocol layers and compare them to the OSI protocol hierarchy.

(c) List and describe the five basic data communications network topologies.

5. Attempt any **two** of the following : **(10×2=20)**

(a) What do you understand with TCP and UDP ? Explain.

(b) Describe the operations of DHCP. Also explain the meaning and the purpose of DNS in detail.

(c) (i) Compare the salient features of HTTP and FTP.

(ii) Differentiate between TFTP and SMTP.