Total number of printed pages – 4

B. Tech

BCSE 3306

Eighth Semester Examination – 2007

COMPUTER NETWORKS

Full Marks – 70

Time : 3 Hours

*Answer Question No. **1** which is compulsory and any **five** from the rest.*

The figures in the right-hand margin indicate marks.

1. Answer the following questions : 2×10

   (a) What are the function of data link layer ?

   (b) How the bandwidth of a signal is related to its spectrum ?

   (c) What is the difference between encoding and modulation ?

P.T.O.

(d) What is the bandwidth of a traditional telephone line ?

(e) Which parts of electromagnetic spectrum are used for communication ?

(f) What is the difference between even parity and odd parity ?

(g) How does a single bit error differs from burst error ?

(h) What is the difference between the information fields in an HDLC I-frame and an HDLC U-frame ?

(i) What is the difference between baseband and broadband ?

(j) What is the difference between authentication and authorization ?

2. (a) Compare and contrast RZ and bipolar AMI encoding scheme. 5

(b) Assume a data stream is made of ten 0s. Encode this stream using (i) Manchester, and (ii) Differential Manchester encoding schemes. How many changes can you find for each scheme ? 5

3. (a) What are the three major classes of guided media ? How do guided media differs from unguided media ? 5

(b) How is WDM similar to FDM ? How they are different ? 5

4. (a) Briefly explain the four types of redundancy checks used in data communication. 5

(b) How are LAPB, LAPD, and LAPM different from each other ? 5

5. (a) Illustrate with an example, the Go-Back-N ARQ protocol. 5

(b) Discuss the handling of a (i) Damaged frame, and (ii) Lost frame in stop-and-wait flow control. 5

6. (a) Explain the operation of Token ring LAN. 5

(b) Compare the mechanism of space division switch with that of the time division switch. 5

7. (a) Show how RSA algorithm can be used to obtain message authentication. 5

(b) Identify the protocols associated with the domain name system. Outline the sequence of messages that are exchanged between the protocols to obtain the TCP/IP address of the server. 5

8. (a) Produce a sketch showing the fields that make up the header of a TCP segment and explain the function of each field. 5

(b) List and discuss the reasons for specification of IPv6 protocol. Also describe the feature in the new protocol that overcomes each of the identified limitation of IPv4. 5