2022

MCA

2nd Semester Examination

COMPUTER NETWORK

PAPER—MCA-203

Full Marks : 100

Time : 3 Hours

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Group—A

1. Answer any *five* questions :　　　　　5×2

   (a) What is data communication ? What are the necessary components of data communication ?

   (b) *List the layers* of internet model.

(c) What is digital signal and analog signal ?

(d) What is period and frequency ?

(e) What is bit rate and baud rate ?

(f) What is synchronous and asynchronous transmission ?

(g) What is wavelength ? How do we represent wave length ?

(h) What is bit stuffing ? Give an example.

Group—B

Answer any *four* questions.   4×15

2. What is Topology ? Describe different Types of topology. What is block coding ? What are the steps of block coding ?   2+8+2+3

3. What are the categories of network ? Explain data rate limits for noiseless channel and noisy channel. What is the relationship between propagation speed and propagation time ?   6+4+5

4. What is bandwidth? Explain different line coding techniques of digital transmission. A signal travels from point A to point B. At point A, the signal power is 100W. At point B, the power is 90W. What is the attenuation in decibel? 2+10+3

5. Describe ASK and FSK sampling technique with proper diagram. Explain FDM and TDM with proper diagram. 8+7

6. State the amplitude and frequency modulation with proper diagram. Discuss the concept of redundancy in error detection with proper example. 6+9

7. What are the differences among twisted pair cable, coaxial cable and fiber-optic cable? A receiver receives the code 11110101101. Using the hamming coding algorithm, find out the original code.

6+9

8. Explain the Go-Back-N ARQ technique in flow control. What is HDLC? Describe the frame format of HDLC. 7+2+6

9. Describe the procedure of CSMA/CA with with proper flow chart. What is logical address? Explain Classful addressing. 6+2+7

[Internal assessment – 30]

———