NEW

2017

BCA

4th Semester Examination

COMPUTER NETWORKS

PAPER—2205

Full Marks : 100

Time : 3 Hours

The figures in the right-hand margin indicate full marks.

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

Illustrate the answers wherever necessary.

Answer *Q. No. 1* and any *four* from the rest.

1. Answer any *five* questions : 5×2

(a) What do you mean by default mask value of an IP address ?

(b) How does a repeater differ with an amplifier ?

(c) What is the purpose of a guard band in modulation techniques ?

(d) What is the advantage of controlled access over random access ?

(e) What is Piggybacking ?

(f) Find the Hamming distance between the vectors 11101010 and 11011010.

(g) Differentiate between attenuation and distortion.

(h) Define SNR.

2. (a) What do you mean by transmission impairments ? Describe attenuation, distortion and noise in this context.

(b) "NRZ-L encoding technique does not provide strong synchronization."—Explain.

(c) What is baud rate ? What is the relationship between baud rate and bit rate ? (2+2+2+2)+4+(2+1)

3. (a) What is the importance of FSO/OSI model ? Describe TCP/IP protocol suite briefly. 2+7

(b) State Nyquist theorem. Describe SNR. 2+2

(c) We need to send 256 kbps over a noiseless channel with a bandwidth of 20 kHz. How many signal levels do we need ? 2

4. (a) State advantages and disadvantages of Mesh topology ? 5

(b) Describe the phases those are required for communication in a circuit-switched network. 5

(c) Describe TDM ? How it differs from TDMA ? 3+2

5. Differentiate between Stop and Wait Automatic Repeat Request (ARQ) and Go-Back N Automatic Repeat Request ?

Difference between Pure Aloha and Slotted Aloha.

Briefly describe different type of Carrier Sense Multiple Access (CSMA).

What is Ethernet ?

Describe different type of Ethernet.

What do you mean by Hab ? 3+2+4+1+4+1

6. (a) How does the frame layer address field differ from the HDLC address field ?

(b) What are 'adaptive and non-adaptive routings ? Give examples.

Describe the working principle of any one adaptive routing algorithm.

(c) What do you mean by data security ? 4+(2+1)+6+2

7. Write short notes (any *five*) : 5×3

(a) Pulse Amplitude Modulation (PAM) ;

(b) Twisted Pair Cable ;

(c) DNS ;

(d) Classful Addressing ;

(e) Bit stuffing ;

(f) Token Ring ;

(g) Frequency Modulation.

[Internal Assessment — 30 Marks]