BCA - 5th

ENGINEERING & MANAGEMENT EXAMINATIONS, DECEMBER - 2007

DATA COMMUNICATION & COMPUTER NETWORK

SEMESTER - 5

Time : 3 Hours] [Full Marks : 70

GROUP - A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for the following : $10 \times 1 = 10$

i) Protocols are

a) Agreements on how communication components are to communicate

b) Logical communication channels for transferring data

c) Physical communication channels for transferring data

d) none of these.

ii) 'Baud' means

a) the number of bits transmitted per unit time

b) the number of bytes transmitted per unit time

c) the rate at which signal changes

d) none of these.

iii) As the bit rate of FSK signal increases, the bandwidth

a) decreases b) increases

c) remains same d) doubles.

iv) In ..... ARQ if an NAK is received, only the specific damaged or lost frame is retransmitted.

a) stop-and-wait b) go-back-N

c) selective repeat d) both (a) and (b).

v) CDMA stands for

a) Carrier Statistical Multiple Access

b) Carrier Sense Multiple Access

c) Conventional Division Multiple Access

d) Carrier Source Multiple Access.

vi) QMA stands for

a) Quantum Amplitude Modulation

b) Quadrate Amplitude Modulation

c) Quantities Amplitude Modulation

d) Quadrature Amplitude Modulation.

vii) How many layers are there in TCP/IP Protocol ?

a) 7 b) 5

c) 4 d) 6.

viii) TCP stands for

a) Transmission Control Protocol

b) Top Control Protocol

c) Timing Control Protocol

d) none of these.

ix) Baud rate of the signal if the bit rate is 4000 bits per second & 4 bits per signal is

a) 4000 b) 16000

c) 1000 d) none of these.

x) The Topology with highest reliability is

a) Bus topology b) Star topology

c) Ring topology d) Mesh topology.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following. $3 \times 5 = 15$

2. a) What do you mean by Multiplexing ?

   b) Discuss the basic difference between TDM and FDM. 2 + 3

3. a) What is 'Ethernet' ?

   b) What are the differences between IEEE 802·4 and IEEE 802·5 ? 1 + 4

4. Write a note on pure and slotted ALOHA.

5. Briefly explain IPv4 Datagram.

6. What do you mean by Cyclic Redundancy Check ? Explain with a block diagram.

GROUP – C

(Long Answer Type Questions)

Answer any *three* questions. $3 \times 15 = 45$

7. a) Write down the names of different multiple access protocol. Compare among FDMA, TDMA and CDMA. 3 + 5

   b) Consider a noiseless channel with a bandwidth of 3000 Hz transmitting a signal level. Calculate the bit rate. 2

   c) Write a short note on CSMA/CD. 5

8. a) Draw the block diagram of stop-and-wait ARQ protocol and explain it. 3 + 3

   b) Explain the Sliding window. What is Piggybacking ? 6 + 3

9. a) Explain the OSI reference model. 6

   b) Compare the OSI with TCP/IP reference model. 3

   c) Define Repeater, Router & Bridge. 6

10. a) What are the needs of modulation ? 3

b) Compare among ASK, FSK & PSK with the help of neat sketch. 6

c) For 1001101101, draw the line codes in PRZ, BPRZ, Manchester code. 6

11. a) What do you mean by congestion ? Why does congestion occur in the network layer ? 5

b) Describe the concept of Leaky Bucket for controlling congestion. 6

c) Explain the terms 'Bridging' and 'Routing'. 4

12. Write short notes on any *three* of the following : 3×5

a) Virtual packet switching

b) TCP segment format

c) Public key & private key

d) IP addressing.

END