Name : .....

Roll No. : .....

Invigilator's Signature : .....

CS/B.Tech/ICE(OLD)/SEM-6/CS-611/2013

2013

COMPUTER NETWORK AND INTERNET WORKING

Time Allotted : 3 Hours *Full Marks :* 70

The figures in the margin indicate full marks.

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

GROUP – A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for the following : 10 × 1 = 10

   i) Subnet mask in class A has fourteen 1's. How many subnets does it define ?

   a) 31 b) 8

   c) 64 d) 128.

   ii) The monitor station in what standard ensures that one and only one token is circulating ?

   a) FDDI b) 802.5

   c) 802.3 d) All of these.

iii) In which ARQ, when a NAK receive, all frames sent since the last frame acknowledge are retransmitted ?

a) Stop and wait b) Selective reject

c) Go back-*n* d) Both (a) and (b).

iv) Routers function in which layers ?

a) Data link layer b) Physical layer

c) Transport layer d) Network layer.

v) If digital data rate of 9600bps is encoded using 8 level phase shift keying (PSK) method the baud rate is

a) 3200 b) 1200

c) 9600 d) 4800.

vi) If CDMA network has eight stations, the medium bandwidth has ..... bands

a) 1 b) 8

c) 2 d) 16.

vii) Which error detection method involves polynomials ?

a) Simple parity check

b) CRC

c) Two dimensional paritycheck

d) Checksum.

viii) Which is present in all HDLC control fields ?

a) P/F bits b) N (S)

c) Code bits d) N (R).

ix) Rip is based on

a) Link state routing

b) Distance vector routing

c) Dijkstra algorithms

d) Path vector routing.

x) Four bits are used for packet sequence numbering in a sliding window protocol used in computer network. Maximum window size is

a) 15 b) 16

c) 4 d) 8.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following. 3 × 5 = 15

2. What is Socket Address ? What do you mean by process to process delivery ? 3 + 2

3. Write the difference between reliable service and unreliable service.

4. How does delay and throughput measure in network performance ?

5. Explain channel utilization for ALOHA is 18%. Explain random access and channel access. 2 + 3

6. What is routing ? What is the difference between static routing and dynamic routing ? What default routing ?

1 + 2 + 2

GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following. 3 × 15 = 45

7. a) What is bit stuffing ? Why is it used ? Give an example. 3

   b) Draw the coding using differential Manchester codes for a bit pattern of 100101101. 3

   c) What is two dimensional parity ? What is its advantage ? Explain with suitable example. 5

   d) Suppose 4 signals each with a band width of 4 kHz be transmitted under TDM with a frame guard band of 1 kHz. What is the maximum bandwidth of the path required for this purpose ? 4

8. a) Which class of IP address is used for multicast communication ? What is the function of DHCP ? 1 + 4

   b) What is CRC ? Explain the performance of CRC. 5

   c) Explain circuit switching and packet switching. 5

9. a) What are Datagram switching and Virtual circuit switching ? Explain. 8

   b) What type of address is 255.255.255.255 ? 2

   c) What is routing table ? Discuss IPV4 frame format. 5

10. a) Explain CSMA/CD Technique. Explain persistence strategy. 4 + 3

    b) Explain priority management scheme of token ring. 5

    c) A modem has a baud rate of 30 signals/sec. If the transmits data is at the rate of 1200 bps, what is the coding rate ? 3