



Name :

Roll No. :

Invigilator's Signature :

**CS/B.TECH(ICE-EIE(O)/SEM-6/CS-611/2011
2011**

COMPUTER NETWORK AND INTERNETWORKING

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 :

$$10 \times 1 = 10$$

- i) Which one is a UNIX command to check your IP ?
 - a) ip
 - b) ipconfig
 - c) ifconfig
 - d) showip.
- ii) Which one is a DCE device ?
 - a) Modem
 - b) Computer
 - c) Network Card
 - d) None of these.
- iii) How many links are required for a fully connected ring topology consisting of n nodes
 - a) $n (n - 1)$
 - b) n
 - c) $n (n - 1) / 2$
 - d) $n - 1$.

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GROUP – B

(Short Answer Type Questions)

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

2. a) Describe Simplex, Half Duplex and Full Duplex data transmission.
b) What are the advantages of analogue signal over digital signal ? $3 + 2$
3. a) Discuss advantages and disadvantages of mesh topology.
b) What are the advantages of networking in daily life ? $3 + 2$
4. Explain LLC and MAC sub layer. 5
5. Describe Circuit Switch, Message Switch and Packet Switch. 5
6. a) What do you mean by Network Security ? Explain.
b) What do you mean by CSMA ? How does it differ from CSMA/CA ? $3 + 2$

GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following. $3 \times 15 = 45$

7. a) Discuss guided media communications.
b) Received data is 10010100101. Find the error by Hamming code.
c) Explain MODEM technology term of data communication. $5 + 5 + 5$
8. a) Describe TCP header format.
b) Compare GSM and CDMA.
c) IP address : 182.44.82.16 Mask : 255.255.255.192. Find out the first address (network address). $6 + 6 + 3$



9. a) What do you mean by ARQ ? Explain selective repeat ARQ.

b) Discuss digital to digital encoding techniques.

c) A telephone line allows frequencies from 300 Hz to 3300 Hz. The SNR is 3162. Calculate the channel capacity.

6 + 6 + 3

10. Compare any *three* of the following :

3 × 5 = 15

a) Dijkstra's Algorithm and Bellman-Ford Algorithm

b) Pure ALOHA and Slotted ALOHA

c) Token Bus and Token Ring

d) STP and UTP

e) CSMA/CD and CSMA/CA.

11. Write short notes on any *three* of the following :

3 × 5 = 15

a) FDDI-1 frame format

b) Leaky bucket algorithm

c) RSA algorithm

d) ISDN

e) Fibre optics.

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