



Name : .....

Roll No. : .....

Invigilator's Signature : .....

**CS/B.Tech (ICE/EIE(O))/SEM-6/CS-611/2010  
2010**

**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) How many links are required for a fully connected ring topology ?

- |                    |             |
|--------------------|-------------|
| a) $n ( n - 1 )$   | b) $n$      |
| c) $n ( n - 1 )/2$ | d) $n - 1.$ |

ii) Which one is a DCE device ?

- |                 |                   |
|-----------------|-------------------|
| a) Modem        | b) Computer       |
| c) Network Card | d) None of these. |

iii) Which one is a UNIX command to check your IP ?

- |             |             |
|-------------|-------------|
| a) ip       | b) ipconfig |
| c) ifconfig | d) showip.  |



- iv) Which one is not an application layer protocol ?
  - a) SMTP
  - b) Telnet
  - c) TCP
  - d) DNS.
- v) FTP runs on which port ?
  - a) 23
  - b) 21
  - c) 80
  - d) 1023.
- vi) The process of converting analog signals into digital signals so that they can be processed by a receiving computer is referred to as
  - a) modulation
  - b) demodulation
  - c) synchronizing
  - d) digitizing.
- vii) The x.25 standard specifies a
  - a) technique for dial access
  - b) DTE/DCE interface
  - c) data bit rate
  - d) none of these.
- viii) Which of the following is considered a broad band communication channel ?
  - a) Coaxial cable
  - b) Fibre optics cable
  - c) Microwave circuits
  - d) All of these.
- ix) The transmission signal coding method of TI carrier is called
  - a) Bipolar
  - b) NRZ
  - c) Manchester
  - d) Binary.
- x) A protocol is a set of rules governing a time sequence of events that must take place
  - a) between peers
  - b) between an interface
  - c) between modems
  - d) across an interface.



**GROUP – B**

**( Short Answer Type Questions )**

Answer any *three* of the following.

3 × 5 = 15

2. a) Discuss the advantages and disadvantages of bus topology.  
b) Give some daily life examples of Data communication.  
3 + 2
3. a) Describe simplex, half duplex and duplex data transmission.  
b) Describe the role of Computer Network. 3 + 2
4. Explain MODEM technology in respect of data communication.
5. Describe TCP header format.
6. a) What do you mean by Network Security ? Explain.  
b) What do you mean by CSMA ? How does it differ from CSMA/CD ? 3 + 2

**GROUP – C**

**( Long Answer Type Questions )**

Answer any *three* of the following.

3 × 15 = 45

7. a) Write about unguided media communications.  
b) Received data is 10010100101. Find the error by Hamming code.  
c) Explain LLC and MAC sub-layer. 5 + 5 + 5
8. a) Compare circuit switch, message switch and packet switch.  
b) Compare GSM and CDMA.  
c) What do you mean by Class A, B and C IP ? 6 + 6 + 3



9. a) What do you mean by ARQ ? Explain selective reject ARQ.
- b) Discuss Digital to Digital encoding techniques.
- c) What is www ? How does it work ?
10. a) What type of congestion control is used in networking system ? What types of policies are used ?
- b) What is the difference between open loop and closed loop congestion control ?
- c) What do you mean by Gateway, HUB and Repeater ?
- d) What is Ethernet LAN ?  $6 + 4 + 3 + 2$
11. a) What are the basic security requirements in a network security ?
- b) Discuss about the algorithm for confidentiality.
- c) What is Data Encryption Standard ( DES ) ?
- d) Discuss briefly about RSA algorithm.  $3 + 4 + 4 + 4$
12. Write short notes on any *three* of the following :  $3 \times 5$
- a) Sliding window protocol
- b) MODEM
- c) B – ISDN
- d) Error detection and correction
- e) X.25 internetworking
- f) Fibre optic LAN bridge
- g) SONET
- h) DWDM.
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