



Name :

Roll No. :

Invigilator's Signature :

CS/BCA/SUPPLE/SEM-5/BCA-501/2010

2010

DATA COMMUNICATION & COMPUTER NETWORKS

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) In Ethernet CSMA/CD, the special bit sequence transmitted by media access management for collision handling is called a
 - a) preamble
 - b) portamble
 - c) jam
 - d) none of these.
 - ii) The maximum length of data in a token ring frame is
 - a) 1500
 - b) 4500
 - c) 3200
 - d) 6400.
 - iii) Which is not a basic multiplexing method ?
 - a) FDM
 - b) TDM
 - c) WDM
 - d) MDM.



- iv) A cipher refers to
 - a) an encryption algorithm
 - b) a decryption algorithm
 - c) a private key
 - d) both (a) and (c).
- v) As the bit rate of FSK signal increases, the bandwidth
 - a) decreases
 - b) increases
 - c) remains same
 - d) doubles.
- vi) The topology with highest reliability is
 - a) Bus topology
 - b) Star topology
 - c) Ring topology
 - d) Mesh topology.
- vii) "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.
- viii) UDP belongs to
 - a) Network layer
 - b) Transport layer
 - c) Mac layer
 - d) Data link layer.
- ix) Start and stop bits are used in serial communication for
 - a) Error detection
 - b) Error correction
 - c) Synchronization
 - d) Slowing down the communication.
- x) Which layer handles encryption in ISO/OSI model ?
 - a) Physical
 - b) Presentation
 - c) Session
 - d) Application.



GROUP – B

(Short Answer Type Questions)

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

2. What is IP addressing ? What are the different classes of IP addressing ? What is the difference between static and dynamic IPs. 1 + 2 + 2
3. State the advantages of IPv6 over IPv4.
4. Differentiate between bit rate and baud rate with examples.
5. Write a note on pure and slotted ALOHA.
6. Briefly explain IPv4 Datagram.

GROUP – C

(Long Answer Type Questions)

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

7. a) Explain the OSI reference model. 6
b) Compare the OSI with TCP/IP reference model. 3
c) Define Repeater, Router & Bridge. 6
8. 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

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9. Explain the operations of CSMA/CD bus and Token passing bus. Compare the advantages and disadvantages of each. Why is the latter favoured for real time application such as process control ?

10. What do you understand by the terms

- i) LAN
- ii) MAN
- iii) WAN ?

Give example for each.

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

- a) Virtual packet switching
- b) Public key and private key
- c) X.25
- d) TCP segment format.

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