



Name :

Roll No. :

Invigilator's Signature :

CS/B.TECH(ECE)/SEM-6/EC-602/2012

2012

COMPUTER COMMUNICATION AND NETWORKING

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 any *ten* of the following :

10 × 1 = 10

- i) Which error detection method involves polynomials ?
 - a) CRC
 - b) LRC
 - c) VRC
 - d) Checksum calculation.
- ii) Which protocol is used for file transferring ?
 - a) SMTP
 - b) SCTP
 - c) FTP
 - d) TCP.
- iii) Which connector STP uses ?
 - a) BNC
 - b) RJ-11
 - c) RJ-45
 - d) RJ-69.
- iv) For large networks topology is used.
 - a) Mesh
 - b) Ring
 - c) Bus
 - d) Star.



- v) In OSI network architecture, the routing is performed by
- a) network layer b) transport layer
 - c) application layer d) none of these.
- vi) The steps in transferring a mail message are
- a) connection establishment
 - b) mail transfer
 - c) connection termination
 - d) all of these.
- vii) Interpret the following sequences of characters received by a TELNET client or server
- a) FFFB01 b) FFFE01
 - c) FFF4 d) FFF9.
- viii) Telephone networks are
- a) circuit-switching b) cell-switching
 - c) packet-switching d) message-switching.
- ix) What is the default Administrative Distance (AD) for RIP ?
- a) 90 b) 100
 - c) 110 d) 120.
- x) Define the class of the address : A1:12:3D:CD:0F:FF
- a) uni-cast address b) multi-cast address
 - c) broad-cast address d) any-cast address.
- xi) The latest modulation technique used by data modem is
- a) GMSK b) PSK
 - c) BPSK d) QPSK.
- xii) The Private key cryptography is related to
- a) Cipher text b) Plain text
 - c) Decryption key d) none of these.



GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following.

3 × 5 = 15

2. What do you mean by public key cryptography ? Explain encryption and decryption process using RSA algorithm.

2 + 3

3. What is the difference between intra and inter domain routing ? Write down one example of inter domain routing and explain it.

1 + 1 + 3

4. Briefly describe various persistence methods in CSMA.

5. Explain Mesh topology using suitable diagram. Write down the differences between star topology and mesh topology.

3 + 2

6. What is congestion control ? Explain Leaky bucket algorithm.

2 + 3

GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following.

3 × 15 = 45

7. a) What is the function of ADD/DROP Multiplexer for SONET ?
b) Describe the SONET device-layer relationship.
c) What do you mean by Byte interleaving ?
d) Compare point to point & multipoint network in SONET.
e) What is the difference between SONET & SDH ?

4 + 3 + 2 + 3 + 3



8. a) Define Subnetting & supernetting in IP network.
b) A block of address is granted to a small organization. One of the address is 225.17.37.39/28. Find out the First address, Last address & total number of address.
c) Discuss about TCP/IP Handshaking process for connection establishment & termination.
- $3 + 2 + 2 + 1 + 3\frac{1}{2} + 3\frac{1}{2}$
9. a) Explain GSM architecture with proper diagram.
b) GSM call generation is fully dependent on 'Frequency reuse'. Explain.
c) Discuss about ATM reference model with proper diagram & compare it with OSI reference model.
- $5 + 5 + 5$
10. Explain the following terms with proper example against Bellman-Ford algorithm : 5×3
- i) Minimum cost
 - ii) Maximum cost
 - iii) Re-computing of minimum cost
 - iv) Shortest path tree
 - v) Reaction to Link failure.
11. Write the short notes on any *three* of the following : 3×5
- a) DES
 - b) FDDI
 - c) VPI & VCI
 - d) Add and Drop Multiplexer
 - e) Routing mechanism.

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