

Name :

Roll No. :

Invigilator's Signature :

CS/BCA/SEM-5/BCA-501/2012-13

2012

**DATA COMMUNICATION AND COMPUTER
NETWORK**

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) The slowest transmission speeds are those of
 - a) Twisted pair wire b) Coaxial cable
 - c) Twisted pair cable d) Microwaves.
- ii) HDLC protocol works in
 - a) Application Layer b) Presentation Layer
 - c) Session Layer d) Data Link Layer.
- iii) The number of outgoing lines in a hub is
 - a) 1 b) n
 - c) $n - 1$ d) $n + 1$.

- iv) Base band is
- a) digital signal
 - b) analog signal
 - c) none of these
 - d) all of these.
- v) Encryption is performed in
- a) Network Layer
 - b) Transport Layer
 - c) Session Layer
 - d) Data Link Layer.
- vi) What is the network address for 198.76.9.23 ?
- a) 198.0.0.0
 - b) 198.76.9.0
 - c) 198.76.9.0
 - d) None of these.
- vii) Keyboard is an example of which of the following ?
- a) Simplex
 - b) Half Duplex
 - c) Full Duplex
 - d) None of these.
- viii) Subnet mask of default route in
- a) 0.0.0.0
 - b) B255.255.255.255
 - c) Both (a) and (b)
 - d) None of these.
- ix) Fragmentation is applicable for
- a) IP Header
 - b) IP Data
 - c) TCP Header
 - d) TCP Data.

- x) In sliding window protocol is the window size is 64 what is the range of number
- a) 0 to 63 b) 0 to 64
- c) 1 to 63 d) None of these.

GROUP – B

(Short Answer Type Questions)

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

2. Explain Delta modulation with proper example. Mention its limitations.
3. What is IP addressing ? What are the classes of IP addressing ? What is the difference between static and dynamic IPs ?
4. Explain Leaky Bucket Algorithm.
5. State the advantages of IPv6 over IPv4.
6. Briefly explain FDM process.

GROUP – C

(Long Answer Type Questions)

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

7.
 - a) Compare between Asynchronous TDM and Synchronous TDM with proper diagram.
 - b) Briefly explain Virtual Packet switching network.
 - c) Briefly define Repeater, Bridge and Router. 5 + 4 + 6

8. a) What is MAC address ?
b) Briefly describe the TCP connection establishment and termination. What are the basic differences between TCP/IP and OSI reference mode ?
c) Discuss the tasks of transport layer.
d) Briefly discuss Token Bucket Algorithm of Congestion control. $1 + 4 + 3 + 2 + 5$
9. a) What do you mean by Classes Addressing ?
b) What is the first address in the block if one of the addresses is 167.199.170.82/27 ? If a network on the Internet has a subnet mask of 255.255.240.0 and then what is the maximum number of hosts that it can handle ?
c) What is the need of subnet masking ?
d) How can you compare Pure ALOHA and slotted ALOHA ? $2 + 3 + 3 + 2 + 5$
10. Write short notes on any *three* of the following : 3×5
a) Public key Cryptography
b) BSC protocol
c) Sliding Window Protocol
d) Congestion Control
e) OSI/ISO reference model.
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