



Name :

Roll No. :

Invigilator's Signature :

CS/BCA/SEPARATE SUPPLE/SEM-6/BCAE-601A/2011

2011

ADVANCE NETWORKING & COMMUNICATION

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 × 1 = 10

- i) Bandwidth for BPSK is
 - a) $(1 + d) * S$
 - b) $(1 + d) * S + 2\Delta f$
 - c) Same as that for BASK, but less than that for BFSK
 - d) Same as that for BFSK, but greater than that for BASK.

- ii) The standard for Token Ring is
 - a) IEEE 802.3
 - b) IEEE 802.5
 - c) IEEE 802.6
 - d) none of these.



- iii) Which is true for X.25 ?
- a) It specifies an interface between a host system and a packet switching network
 - b) With the X.25 packet layer, data are transmitted in packets over external virtual circuits
 - c) Both (a) & (b)
 - d) None of these.
- iv) Which is perfectly true for adaptive routing ?
- a) The routing decisions that are made change as conditions on the network change
 - b) A packet is sent by a source node to every one of the its neighbors
 - c) A route is selected for each source-destination pair of nodes in the network
 - d) A node arbitrarily selects only one outgoing path for retransmission of an incoming packet.
- v) WCDMA is an example of
- a) Ad-hoc network
 - b) Wireless network
 - c) 3G network
 - d) None of these.
- vi) Range of class C address is
- a) 128-191
 - b) 190-220
 - c) 192-223
 - d) 190-223.
- vii) Baseband is
- a) Digital signal
 - b) Analog signal
 - c) None of this
 - d) All of these.



- viii) Framing is done in
- a) Network layer
 - b) Transport layer
 - c) Data Link Layer
 - d) None of these.
- ix) The most light cable is
- a) Copper cable
 - b) Fiber optic cable
 - c) Coaxial cable
 - d) Twisted pair cable.
- x) HDLC works in
- a) Application layer
 - b) Session layer
 - c) Presentation layer
 - d) Data link layer.

GROUP – B

(Short Answer Type Questions)

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

2. a) "Since the ideal bandwidth required to transmit any digital signal is infinite, then in reality we cannot send any digital signal from any point to another point". Support or oppose the statement with proper justification.
- b) An analog signal has a bit rate of 8000 bps and a baud rate of 1000 baud. How many data elements are carried by each signal element ? How many signal elements do we need ? $2 + 3$
3. Differentiate between FDM and TDM with proper discussion.
4. What is checksum ? How it is used ? $2 + 3$
5. What is the difference between circuit switching and packet switching ? 5
6. What are the different congestion avoidance strategies used by TCP ? 5



GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following.

3 × 15 = 45

7. Encode the bit sequence 011010111000 using NRZ-L, NRZ-I, RZ, Manchester, Differential Manchester, AMI and Pseudo-ternary coding schemes. Discuss the properties of these coding schemes highlighting their differences.
8. a) What are the elevation angle and coverage angle of a satellite ?
b) Compare and contrast between LEO, GEO and MEO satellites.
c) What are the advantages and disadvantages of CDMA ?
9. Write any *three* of the following :
- a) Difference between 1G and 2G mobile wireless networks.
b) Encode the bit sequence 00100111 using ASK, FSK, PSK and QPSK.
c) Compare AM and FM bandwidth requirement with proper reasoning.
d) Compare circuit switching and packet switching.
e) Write a short note on CSMA/CD.
10. What is symmetric key and asymmetric key cryptography ? Explain RSA algorithm. What are the different security aspects ensured by digital signature ?
11. What is sub netting ? Draw and explain different states of TCP client and server. What is the difference between http1.0 and http1.1 ? What do you mean by Proxy server ?

5 + 7 + 3

3 × 5

4 + 8 + 3

2 + 8 + 3 + 2