*Name* : .....

*Roll No.* : .....

*Invigilator's Signature* : .....

**CS/BCA/SEM-6/BCAE-601A/2012**

**2012**

# ADVANCED NETWORKING AND 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) ARP is used to find

a) IP Address b) MAC Address

c) Subnet Address d) Host Address.

ii) Before data can be transmitted, they must be transformed to

a) periodic signals

b) electromagnetic signals

c) aperiodic signals

d) all of these.

iii) Video on demand, Live television, from many sources, full motion media, electronic mail is offered by

a) X.25 b) Frame Relay

c) N-ISDN d) B-ISDN.

iv) Unipolar encoding uses

a) only one voltage level b) two voltage levels

c) three voltage levels d) none of these.

v) Optical transmission mainly uses

a) TDM b) WDM

c) FDM d) CDM.

vi) In FDDI, data normally travels on

a) primary ring b) secondary ring

c) both rings d) neither rings.

vii) Microwaves are used for

a) unicast communication

b) multicast communication

c) both (a) and (b)

d) none of these.

viii) Baud is

a) number of bits per second

b) number of signal changes per second

c) number of bytes per second

d) number of character changes per second.

ix) GSM stands for

a) Good Service Management

b) Global Service Management

c) Good Sender Memory

d) Global System for Mobile Communication.

x) The speed of Ethernet is

a) 64 kbps b) 64 Mbps

c) 10 kbps d) 10 Mbps.

## GROUP – B

### ( Short Answer Type Questions )

Answer any *three* of the following. 3 × 5 = 15

2. What are Asynchronous protocol and Synchronous protocol ?

3. Briefly explain the function of Packet Switch.

4. Give a brief comparison between I-frame and U-frame.

5. Briefly describe the SNA architecture.

6. Briefly discuss the RSA algorithm.

## GROUP – C

### ( Long Answer Type Questions )

Answer any *three* of the following. 3 × 15 = 45

7. a) What is digital signature ?

b) Give the frame format of X.25.

c) Discuss Manchestar and differential Manchestar encoding with a suitable example.

d) What are the tasks performed in transport layer ?

3 + 4 + 4 + 4

8. a) Briefly explain the Synchronous-Level Data Link Layer ( SDLC ) protocols with neat labelled diagram. 5

   b) What are the different classes of addresses used in IPv4 ? List their ranges in dotted decimal notation. 5

   c) Why is frequency modulation superior to amplitude modulation ? 5

9. a) What are the reasons for congestion in a network ? Describe any one method for congestion control. 7

   b) Could HDLC be used as a data link protocol for a LAN ? Explain your answer. 4

   c) Describe the advantages of a small cell size in ATM. 4

10. a) Why are transport layer protocols like TCP or UDP called end-to-end protocols ? Bring out the difference between them. 4

    b) Compare the following : 2 × 4

       i) Optical fibre and Co-axial cable

       ii) Firewall and Proxy.

    c) Explain the concept of framing with respect to Data Link Layer. 3

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

    a) LEO

    b) SMTP

    c) ARP

    d) UDP

    e) CSMA/CD.