



Name :

Roll No. :

Invigilator's Signature :

CS/BCA/SEP.SUPPLE/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) Before data can be transmitted, they must be transformed to
- a) Periodic signals
 - b) Electromagnetic signals
 - c) Aperiodic signals
 - d) Low frequency sine waves.
- ii) Which of the following can be determined from a frequency domain graph of a signal ?
- a) Bandwidth
 - b) Phase
 - c) Power
 - d) All of these.
- iii) What is the bandwidth of a signal that ranges from 40 kHz to 4 MHz ?
- a) 36 MHz
 - b) 360 kHz
 - c) 3.96 MHz
 - d) 396 kHz.



- iv) A signal is measured at two different points. The power is P_1 at the first point & P_2 at the second point. The dB is 0. This means
 - a) P_2 is zero
 - b) P_2 is equal to P_1
 - c) P_2 is much larger than P_1
 - d) P_2 is much smaller than P_1 .
- v) If the maximum amplitude of a sine wave is 2V, then the maximum amplitude is
 - a) 2V
 - b) 1V
 - c) - 2V
 - d) Between - 2V and 2V.
- vi) Unipolar encoding uses
 - a) Only one voltage level
 - b) Two voltage levels
 - c) Three voltage levels
 - d) None of these.
- vii) In NRZ-I, if a 1 is encountered
 - a) the signal is inverted
 - b) the signal is not inverted
 - c) both (a) and (b)
 - d) none of these.
- viii) Bipolar encoding uses
 - a) two voltage levels
 - b) three voltage levels
 - c) one voltage level
 - d) none of these.
- ix) In 4B\5B encoding
 - a) every bits of data is encoded into a 5-bit code
 - b) every 8-bits of data is encoded into a 10-bit code
 - c) every 12 bits of data is encoded into a 15-bit code
 - d) none of these.



- x) Microwaves are used for
- a) unicast communication
 - b) multicast communication
 - c) both (a) and (b)
 - d) none of these.

GROUP – B

(Short Answer Type Questions)

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

2.
 - a) What is topology ?
 - b) Give an example each of "with Host" and "without Host". Topology.
 - c) What are star topology and Hybrid network ?
3.
 - a) What is high-level data link control ?
 - b) Why is it used ?
 - c) Give the frame format for S-frame.
4.
 - a) What do you mean by classless addressing ?
 - b) What is the first address in the block if one of the block address is 167.199.170.82/27 ?
5. Briefly discuss the RSA algorithm.
6. List and briefly define the ATM classes.

GROUP – C

(Long Answer Type Questions)

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

7.
 - a) What are Asynchronous protocol and Synchronous protocol ?
 - b) What are the types of Synchronous protocol ?
 - c) Discuss the BSC frame format.
 - d) What are the problems arises in BSC frame format ?
 - e) Give a brief comparison between I-frame and U-frame.



8.
 - a) What is PDU (Protocol Data Unit) and what does it contain ?
 - b) What are data rate and signal rate ? Give relation between them.β
 - c) What is DC component ?
 - d) What is Packet Switch Network ?
 - e) What is the difference between datagram network and virtual circuit network ?
9.
 - a) What is Digital Signature ?
 - b) Give the frame format of X.25.
 - c) Discuss Manchester and differential Manchester encoding with suitable example.
 - d) What are the task performed in transport layer ?
10.
 - a) What do you mean by encoding ?
 - b) What is "footprint" ?
 - c) Discuss the B8ZS and HDB3 schemes with suitable example.
 - d) What is the difference between CODEC and MODEM ?
 - e) What are the processes required to perform PCM ? Discus briefly.
11. Write short notes on any *three* of the following :
 - a) LEO
 - b) SMTP
 - c) ARP
 - d) UDP
 - e) CSMA/CD.