



Name :
Roll No. :
Invigilator's Signature :

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

2011

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 : $10 \times 1 = 10$
 - i) Unmodulated signal coming from a transmitter is known as
 - a) canter signal
 - b) base band signal
 - c) primary signal
 - d) none of these.
 - ii) Manchester code is a
 - a) bipolar code
 - b) non-return to zero code
 - c) return to zero code
 - d) none of these.
 - iii) 255.255.0.0 is the default mask for
 - a) Class A
 - b) Class B
 - c) Class C
 - d) Class D.



- iv) TCP is a
 - a) reliable connection oriented protocol
 - b) unreliable connection oriented protocol
 - c) reliable connectionless protocol
 - d) unreliable connectionless protocol.

- v) If a baud rate is 400 for a four PSK signal, the bit rate is bps.
 - a) 100
 - b) 400
 - c) 300
 - d) 1600.

- vi) Before data can be transmitted, they must be transformed to
 - a) periodic signals
 - b) electromagnetic signals
 - c) aperiodic signals
 - d) low frequency line waves.

- vii) NIC provides the station with a byte physical address.
 - a) 7
 - b) 4
 - c) 6
 - d) 5.

- viii) Which of the following can be determined from a frequency-domain graph of a signal ?
 - a) Phase
 - b) Bandwidth
 - c) Power
 - d) All of these.



- ix) ARP protocol is used to map
- a) hardware address to hardware address
 - b) physical address to logical address
 - c) IP network address to hardware address
 - d) none of these.
- x) Dialogue control is controlled by
- a) presentation layer b) application layer
 - c) session layer d) physical layer.

GROUP – B

(Short Answer Type Questions)

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

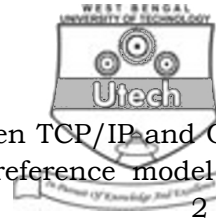
- 2. What is a network firewall ? How is it different from an application firewall ? $3 + 2$
- 3. Compare IP addressing and MAC addressing.
- 4. Explain ALOHA and slotted ALOHA and compare them. $(1 + 1) + 3$
- 5. Point out two advantages and disadvantages of using satellite communication.
- 6. Compare and contrast CSMA/CD and token passing access methods.

GROUP – C

(Long Answer Type Questions)

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

- 7. a) What is digital signature ?
- b) Give the frame format of x.25.
- c) Discuss Manchester and differential Manchester encoding with a suitable example.
- d) What are the tasks performed in transport layer ? $3 + 4 + 4 + 4$



8. a) What are the basic differences between TCP/IP and OSI reference model ? Explain TCP/IP reference model in detail. 2 + 6
- b) What do you mean by congestion control ? Explain the concept of 'token bucket' in controlling congestion. 2 + 5
9. a) What is PDU (Protocol Data Unit) and what does it contain ?
- b) What are data rate and signal rate ? Give the relation between them.
- c) What is DC component ?
- d) What is packet switched network ?
- e) What is the difference between datagram network and virtual circuit network ? 4 + 4 + 2 + 2 + 3
10. a) Describe briefly Frequency Division Multiplexing (FDM) and Time Division Multiplexing (TDM) techniques with relevant diagrams.
- b) What is pulse code modulation ? Explain how it is used to convert analog signals into digital format.
- c) How does a router work in an internetwork ? Differentiate between static and dynamic routers. List some common routing protocols. 5 + 5 + 5
11. a) Explain the operation of Simple Network Management Protocol (SNMP).
- b) 'ATM is a connection-oriented, scalable, and flexible with guaranteed QOS, a virtual circuit packet switching technology that imposes no speed limitations and supports different types of data.' Justify all the terms used in the above statement.
- c) What was the need to develop the mathematical method called Cyclic Redundancy Check ? What is its function ? 5 + 5 + 5

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