

18/12/19
mt mark

CS/BCA(O)/ODD/SEM-5/BCA-501/2019-20

Maulana Abul Kalam Azad University
of Technology, West Bengal



**MAULANA ABUL KALAM AZAD UNIVERSITY OF
TECHNOLOGY, WEST BENGAL**

Paper Code : BCA-501

PUID : 05144 (To be mentioned in the main answer script)

**DATA COMMUNICATION &
COMPUTER NETWORKS**

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 any ten of the
following : $10 \times 1 = 10$

- i) TCP is a/an
 - a) reliable connection oriented protocol
 - b) unreliable connection oriented protocol
 - c) reliable connectionless protocol
 - d) unreliable connectionless protocol.

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

[Turn over

7.

- iii) UDP belongs to
a) network layer b) transport layer
c) Mac layer d) data link layer.
iv) Range of class C address is
a) 128-191 b) 190-220
c) 192-223 d) 190-223.

8.

- v) 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.

9.

- vi) Framing is done in
a) network layer b) transport layer
c) data link layer d) none of these.

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

- viii) GSM stands for
a) Good Service Management
b) Global Service Management
c) Good Sender Memory
d) Global System for Mobile Communication.

- ix) Which topology features a point-to-point line configuration ?
a) Mesh b) Ring
c) Star d) All of these.

- x) After a message is decrypted, it is called
a) plain text b) cipher text
c) crypto text d) none of these.

- xii) Keyboard is an example of which of the following ?

 - a) Simplex
 - b) Half Duplex
 - c) Full Duplex
 - d) None of these.

xiii) MODEM stands for

 - a) MODulo Encoding Mechanism
 - b) MOdulator DEModulator
 - c) Maximally Optimized DEModulator
 - d) None of these.

GROUP - B

(Short Answer Type Questions)

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

- Any three of the following. $3 \times 5 = 15$

 2. a) Compare between OSI Model and TCP/IP reference Model. 4
 - b) What is MAC address? 1
 3. What is IP addressing? What are the classes of IP addressing? What do you mean by classless addressing? 1
 4. Explain the transmission characteristics of fiber optics. 2 + 2 + 1
 5. Encode the bit stream 01001110 using NRZ-L, NRZ-I encoding. 1
 6. What is RSA? How does it work? 1 + 4

GROUP - C

(Long Answer Type Questions)

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

7. a) Discuss the frame format of 802.4 LAN. 4

b) Given a bandwidth of 5000 Hz for an 8-PSK signal, what are the band rate and bit rate ? 2 + 2

c) Compare between BSC protocol and HDLC protocol. 4

d) What is piggy backing ? 3

8. a) Explain the Stop and Wait protocol. 4
b) What is circuit switching ? How does it differ with message switching ? 3 + 2
c) Briefly define Repeater, Bridge and Router. 2 + 2 + 2
9. a) Encode the bit sequence 0101 using ASK, FSK, PSK. 2 + 2 + 2
b) Briefly describe the priority access methods of Token Ring. 5
c) Compare FDM and TDM. 4
10. a) Briefly describe the function of Data Link Layer and Network Layer of OSI Model. 3 + 3
b) What are DTE and DCE ? Explain the DTE and DCE interface. 2 + 4
c) What is baud rate ? 1
d) What are Private Key and Public key ? 2
11. Write short notes any *three* of the following : 3 × 5
a) Leaky Bucket Algorithm
b) GEO
c) ALOHA
d) Topology
e) PCM.