BRAINWARE UNIVERSITY

Course – M.Sc. (HN)

Computer Network (MHN104)

(Semester – 1)

Time allotted: 3 Hours **Full Marks: 70**

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group –A

(Multiple Choice Type Question)

10 x 1 = 10

1. *Choose the correct alternative from the following*

(i) How long is an IPv6 address?

a. 16 bits b. 32 bits

c. 128 bits d. 256 bits

(ii) Where is a hub specified in the OSI model?

a. Application layer b. Data Link layer

c. Physical layer d. Session layer

(iii) DHCP server provides _____ to client.

a. protocol b. IP address

c. MAC address d. Network address

(iv) A set of rules that govern all aspects of information communication is called

a. Server b. Internet

c. Protocol d. OSI Model

(v) The subnet mask 255.255.255.224 of a class C network extends the network portion to

a. 1 bit b. 2 bits

c. 3 bits d. 4 bits

(vi) Frames from one LAN can be transmitted to another LAN via the device

a. Router b. Bridge

c. Repeater d. Modem

(vii) In full duplex data transmission, both the sender and the receiver

a. cannot talk at once
b. can receive and send data simultaneously
c. can send or receive data one at a time
d. can do one way data transmission only

(viii) Connection establishment involves a _____ -way handshake in TCP

a. one
b. two
c. three
c. four

(ix) Which of the following TCP/IP protocol is used for transferring electronic mail messages from one machine to another?

a. FTP
b. SNMP
c. SMTP
d. RPC

(x) Remote login can be done through

a. TCP
b. UDP
c. TELNET
d. DHCP

Group – B

(Short Answer Type Question)
(Answer any *three* from the following)

3 x 5 = 15

2. State the advantage and disadvantages of Star and Ring Topology. [5]
3. Discuss the responsibilities of Data link layer in ISO-OSI layer. [5]
4. A subnet mask in class C addressed network has twenty eight 1's. How many subnets does it define? How many hosts are present in each subnet? [2.5+2.5]
5. Discuss the jobs of ARP and RARP. [2.5+2.5]
6. Give the basic structure of a HTML webpage. Create a web page having "Radio Buttons", "Checkbox" and "Drop Down List" with "Submit" button. [2+3]

Group – C

(Long Answer Type Question)
(Answer any *three* from the following)

3 x 15 = 45

7. (a) Discuss three methods of Controlled Access. Compare among those methods. [6+4]

	(b)	Write how message is exchanged in CDMA?	[5]
8.	(a)	Discuss bit stuffing in framing.	[3]
	(b)	What are the advantages of dynamic routing over static routing?	[3]
	(c)	Discuss OSPF with a proper example. How does it differ from "HELLO" protocol?	[7+2]
9.	(a)	Describe all the fields of a TCP Segment header in brief.	[5]
	(b)	An organization is using an IP network 175.100.10.0 and needs 500 subnets and 126 usable hosts in each subnet. Determine the subnet mask. Also determine the 1^{st} host address of the 5^{th} subnet and last host address of the 10^{th} subnet.	[8]
	(c)	Discuss about broadcast addresses.	[2]
10.	(a)	Differentiate between half-close and full-close states in 3-way handshaking with proper examples.	[4]
	(b)	Discuss SSL and its subprotocols.	[8]
	(c)	Write different types of Resolution in DNS?	[3]
11.		Write short notes on any *three* of the following :	[3 x 5]
	(a)	Static Routing	
	(b)	FIREWALL	
	(c)	TELNET	
	(d)	ISDN	