



# BRAINWARE UNIVERSITY

Course – MSc(HN)

Internetworking Technologies (MHN103)

(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)

1 x 10 = 10

1. Choose the correct alternatives of the following :
  - i) Which topology technique uses HUB ?
 

a) Star	b) Mesh
c) Bus	d) All of these.
  - ii) Which type of switching uses the entire capacity of a dedicated link ?
 

a) virtual circuit packet switching	b) circuit switching
c) datagram packet switching	d) message switching.
  - iii) To locate the destination, ARP request packet contains
 

a) multicast address	b) destination logical address
c) broadcast address	d) none of these.
  - iv) 3-way handshaking of connection establishment is associated with
 

a) HTTP protocol	b) UDP protocol
c) FTP protocol	d) TCP protocol.
  - v) Identify the class of IP address 128.1.2.3.
 

a) Class B	b) Class A
c) Class D	d) Class C.

- vi) In the URL HTTP://xxx:yyyy/zzz, the method is \_\_\_\_\_.
- |         |         |
|---------|---------|
| a) xxx  | b) HTTP |
| c) yyyy | d) zzz  |
- vii) The address space of IPv6 is
- |             |                |
|-------------|----------------|
| a) 0        | b) 128         |
| c) infinite | d) $2^{128}$ . |
- viii) The shortest path in routing can refer to
- the least expensive path
  - the least distant path
  - the path with the smallest number of hops
  - any or a combination of the above.
- ix) The total number of links required to connect n devices using Mesh topology is
- |                 |            |
|-----------------|------------|
| a) $n(n-1) / 2$ | b) $2^n$   |
| c) $n(n+1) / 2$ | d) $n^2$ . |
- x) When a host knows its IP address but not its physical address, it can use
- |         |          |
|---------|----------|
| a) RARP | b) ARP   |
| c) ICMP | d) IGMP. |

### Group – B

(Short Answer Type Question)

3 x 5 = 15

Answer any *three* of the following

- What are the criteria of a network?
- State where UDP is used.
- Describe different types of Firewall.
- Write the process of NAT.
- Write short note on DHCP.

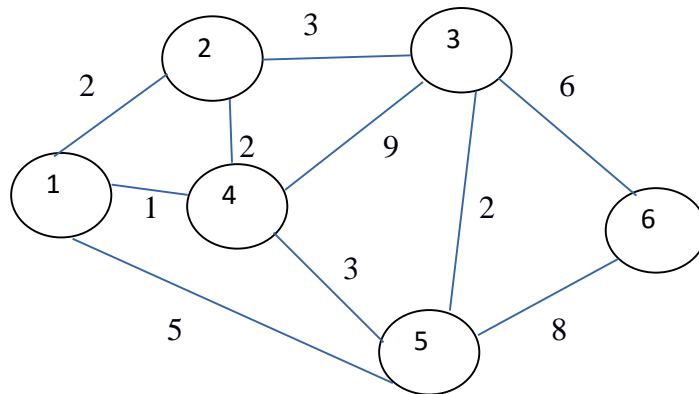
**Group – C**

(Long Answer Type Question)

3 x 15 = 45

Answer any *three* questions

7. a) Why we use layered network architecture? Explain the jobs of each layer of TCP /IP model.  
 b) Differentiate circuit switching and packet switching. 2+8+5
8. a) How do Proxy ARP & BOOTP work ?  
 b) What is IPv4 classless Address?  
 c) Describe the fields of a IP datagram with a proper diagram. 5+2+8
9. a) Write about the handshake protocol used in SSL.  
 b) Explain how remote logging takes place in TELNET. 10+5
10. a) Differentiate static routing with dynamic routing. Explain how subnet formed .  
 What are the elements of LSPs ?  
 b) Using Dijkstra's Routing Algorithm find out the list cost route from node 1 to 6 for the following network.

 $(2+3+2) + 8$ 

11. Write short notes on any *three*: 3 x 5
- a) Three-way handshaking in TCP  
 b) DNS  
 c) Gateway  
 d) Email