BRAINWARE UNIVERSITY

Term End Examination 2018 - 19

Programme – Master of Science in Hardware & Networking

Course Name - Computer Network

Course Code - MCSE010602

(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)   The two parameters used for measuring the performance of a network are

     a. throughput & delay   b. power & delay

     c. power and throughput   d. throughput & buffer size

(ii)   In the string 219.46.123.107, what is the network address of the host we are looking for ?

     a. 219.46.123.0   b.   107.123.0.0

     c. 107.123.46.0   d. 107.0.0.0

(iii) CRC is a method used for

     a. error detection   b.   error-correction

     c. error-encapsulation   d.   both a & b

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

     a. one   b. two

     c. three   d. four

(v)   Which of the following is an inter-domain routing protocol ?

     a. RIP   b. OSPF

     c. BGP   d. both a & b

(vi)   The subnet mask 255.255.255.192 of a class C network extends the network portion to

     a. 1 bit   b. 2 bits

     c. 3 bits   d. 4 bits

(vii) In which topology there is a central controller or hub ?

     a. Star   b. Mesh

     c. Ring   d. Bus

(viii) Which one of the following task is not done by data link layer?

     a. Framing   b. error control

     c. flow control   d. channel coding

(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)   Which of the following is an application layer service ?

     a. Network virtual terminal   b. File transfer, access, and management

     c. Mail service   d. All of the mentioned

Group – B

(Short Answer Type Questions)   3 x 5 = 15

Answer any *three* from the following

2. Compare the advantage and disadvantages of Mesh and Star Topology. Construct a hybrid topology according to your choice.   3+2

3. Describe Simplex, Half-Duplex and Full-Duplex communications with proper diagrams and examples.

    State the criterion of a good network.   3+2

4. Given the IP 192.168.5.40/28 as one of the member of a classless IP group, find out the first address, last address and total number of addresses in this group.   5

5. Describe how DHCP works.

    State the advantage of using DHCP over BOOTP.

    4+1

6. Create a form in HTML using Text Box, Drop-down List, Radio Button and Checkbox.
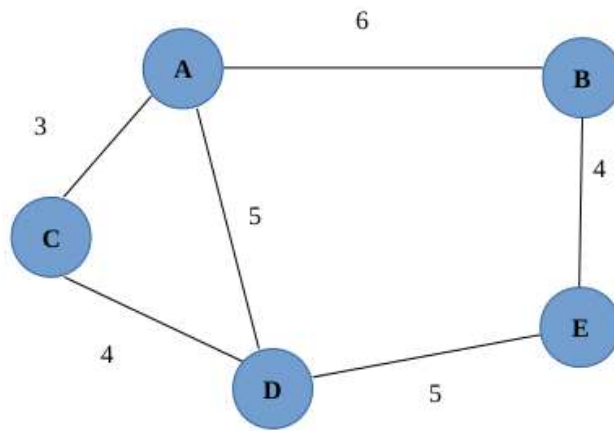
    5

Group – C

(Long Answer Type Questions)   3 x 15 = 45

Answer any *three* from the following

7. (a) Compare Pure ALOHA with Slotted ALOHA. State which one is better and why.   4+2

    (b) Compare FDMA with TDMA.   4

    (c) Show how 'Poll' and 'Select' Methods works in the context of controlled access.   5

8. (a) Differentiate between static and dynamic routing.   5

    (b) An IP network 192.168.130.0 is using the subnet mask 255.255.255.224. Determine the number of subnets, number of hosts in each subnet and find out the subnets to which the following hosts belong to :
    192.168.130.10, 192.168.130.93, 192.168.130.222, 192.168.130.250.   8

    (c) Discuss the use of Private and Public IP.   2

9. (a) Discuss NAT-PAT.   3

    (b) Discuss the roles of various fields related to the Fragmentation process in a IP header.   5

    (c) Discuss about the ATM services.   5

    (d) What are the responsibilities of Network layer in ISO-OSI model?   2

10. (a) Discuss the roles of various fields of a TCP segment.   6

    (b) Differentiate between TCP and UDP.   3

(c) Find out the shortest path between A to E, following Dijkstra's algorithm in the figure below :

6

11. Write short notes on any *three* of the following : 3x5

(a) DNS name resolution

(b) SSL

(c) FTP

(d) TELNET

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