Daffodil International University

Department of Computer Science and Engineering
Faculty of Science & Information Technology
Midterm Examination Semester: Fall 2019
Course Code: CSE 313 (Day) Course Title: Computer Networks

Time: 1.5 hours **Full Marks: 25**

Part A: Answer the following questions in brief. 5*2=10

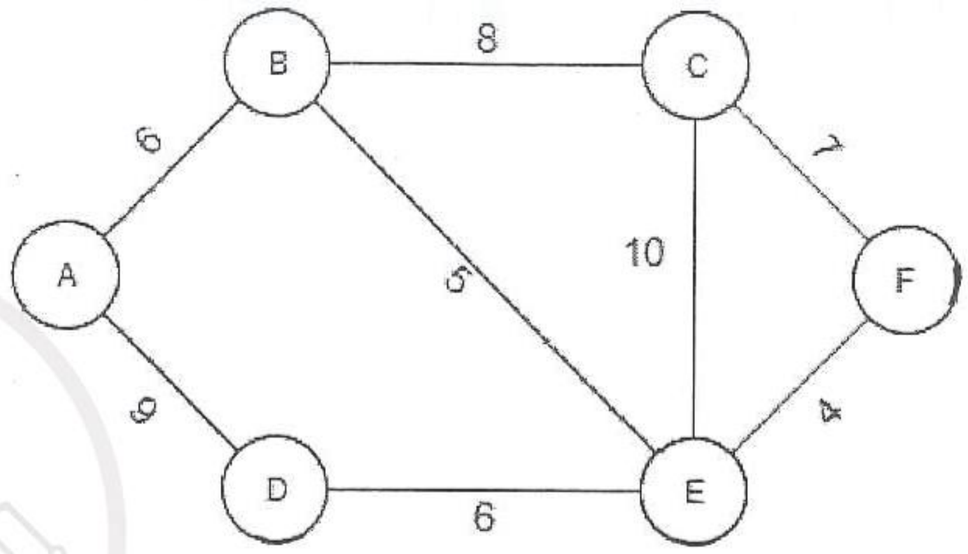
1. How does it take a packet of length 1 Megabyte to propagate over a link of distance 2000 km? Where propagation speed 2.5×10^8 m/s and transmission rate 1 Mbps.
2. Find the summarized IP address with subnet mask of the following IP addresses. 192.168.1.0/27, 192.168.1.32/27, 192.168.1.64/27, 192.168.96/27, 192.168.1.128/27, 192.168.1.160/27, 192.168.1.192/27, 192.168.1.224/27.
3. Differentiate between different trees used by multicast routing technique.
4. "SMTP is not used to receive emails" - justify the statement with proper clarifications.
5. Differentiate between the queries of DNS Name Resolution with proper diagram.

Part B: Answer ***ALL*** Questions 3*5=15

1. You have been given an IP address block of 10.0.0.0/23. You need to create following sub-networks. Subnet assignments are: 1st subnet, MC LAN, up to 220 hosts; 2nd subnet, PC LAN, up to 120 hosts, 3rd subnet UC LAN, up to 60 hosts; point to point link between MC-PC, PC-UC and UC-MC.

Subnet Name	Required Hosts	Allocated Size	Network Address	Subnet Mask	Host Range	Broadcast Address
MC	220					
PC	120					
UC	60					
MC-PC	2					
PC-UC	2					
UC-MC	2					

2. Consider the following network. Based on Distance Vector Routing algorithm, Create the initial tables for node B, C, D and update table for node E, F.



3. Consider the following table:

Network	Interface	Next-hop
10.1.1.0/24	fastethernet 0/0	10.1.1.10
10.1.2.0/24	fastethernet 0/1	10.1.1.11
10.1.4.0/24	serial0/1	10.1.1.12
10.1.5.0/24	serial0/2	10.1.1.13
10.1.3.0/25	fastethernet 0/2	Directly connected
10.1.5.64/27	fastethernet 0/3	Directly connected
10.1.5.64/28	serial0/3	Directly connected
10.1.5.64/29	serial0/4	Directly connected

According to the above table, where will the router send a packet with destination address 10.1.5.65? Explain your answer with proper calculations.