Class Test-01

Course Title: Computer Networks **Course Code: CIS 211**

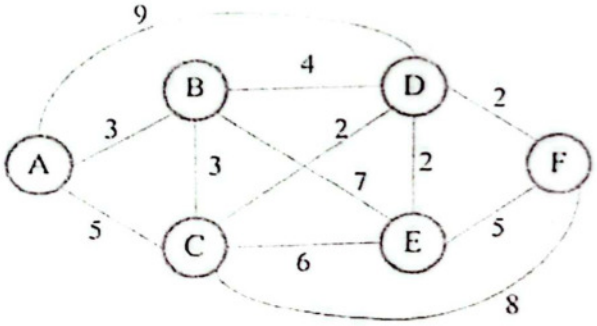
Section: Batch 19-A **Total Mark: 15**

(a)	Explain the seven layers of the OSI reference model and describe the functions of each layer. How do these layers interact with each other to facilitate communication in a network?	**5**
(b)	A company has been assigned the IP address **192.168.10.0/24** and needs to create **six subnets** using **fixed-length subnetting**. 1. What subnet mask should be used to meet the requirement? 2. List the subnet addresses for all six subnets. 3. Determine the **first usable IP address**, **last usable IP address**, and **broadcast address** for the third subnet. 4. How many total usable host addresses are available in each subnet? Explain your approach and calculations in detail.	**10**

Class Test-02

Course Title: Computer Networks **Course Code: CIS 211**

Section: Batch 19 **Total Mark: 15**

(a)	A network administrator wants to combine the following four subnets into a single supernet: • 172.16.16.0/24 • 172.16.17.0/24 • 172.16.18.0/24 • 172.16.19.0/24 What would be the new supernet address and subnet mask?	**5**
(b)	What is the advantage of IPv6 over IPv4?	**4**
(c)	 Find out the distance from router A to router F using link state routing algorithm? Also show the path from A to F	**6**

Class Test-03

Course Title: Computer Networks **Course Code: CIS 211**

Section: Batch 19-A **Total Mark: 15**

1	You are configuring an email system for an online store with high customer interaction. The system needs to handle a large volume of emails daily. You are deciding whether to use SMTP for outgoing mail and whether to opt for persistent or non-persistent connections for communication between the email server and clients.	
	(a) How does the SMTP protocol work in delivering emails to the customers?	**4**
	(b) With high email traffic from customers, which connection type—persistent or non-persistent—would provide better efficiency and why?	**6**
2	You're designing a real-time online multiplayer game where players need fast, continuous updates with low latency. The game can tolerate occasional packet loss but prioritizes speed over reliability. (a) Which protocol, TCP or UDP, would you choose for the game's data transmission, and why?	**5**