Assignment for - UNIT 4,5,6

1. Compare and contrast pure ALOHA and slotted ALOHA in terms of efficiency and throughput. Provide graphs to support your explanation.
2. Explain how CSMA/CD and CSMA/CA protocols work. Why is CSMA/CD not suitable for wireless networks.
3. Explain the architecture and working of IEEE 802.11 Wireless LAN. What are the roles of BSS, ESS, and access points.
4. What is data link layer switching? Explain how a switch operates using MAC address tables and forwarding decisions.
5. Describe at least three congestion control algorithms. How do they differ in controlling traffic and maintaining quality of service?
6. Explain the different types of services offered by the transport layer. How are reliability, error control, and multiplexing handled?
7. Describe the three-way handshake used in TCP for connection establishment. What happens if one of the packets in the handshake is lost?
8. Compare TCP and UDP protocols in terms of reliability, use cases, and overhead. Why is UDP preferred in real-time applications such as video streaming?