Computer Communication Networking

Module 1 Question Bank

INTRODUCTION:

1. Mention the various components of Data communication system.
2. Mention the types of data representation. Explain three different types of data flow in a computer network with diagram.
3. With a neat diagram explain in brief the various network topologies. Also mention their advantages/ drawbacks.
4. Differentiate between the following,
    i. LAN and WAN networks
    ii. Circuit switching and packet switching.
    iii. Computer network and Internet
    iv. Contention time, back-off time ,vulnerable time
    v. CSMA/CD and CSMA/CA

NETWORK MODELS:

1. What is layered architecture? Explain its need.
2. Draw i) TCP/IP protocol suite ii) OSI Protocol suite. Explain all layer functionalities in the respective models.
3. Explain with neat diagram the concept of Encapsulation and Decapsulation.
4. Explain the different types of addressing used in TCP/IP model with example.
5. Compare TCP/IP and OSI model.

DATA LINK LAYER:

1. Explain the different types of framing with examples
    a. Bit stuffing b. Byte stuffing

2. Explain the two main functions of data link control.
3. Briefly describe the services offered by data link layer. Which are the two sub layers of Data link layer.

4. Byte stuff the data

   Example:

1. esc			4. flag		6. esc	7. esc	8. esc		10. Flag

5. Bit stuff the data

   Example

   00011111110011111010001111111111111000011111

6. What is link layer addressing? Explain in brief.
7. What is ARP? Indicate the position of ARP in TCP/IP protocol suite with the help of diagram and explain its operation.
8. Explain the simple protocol with Finite State Machine and flow diagram.
9. Explain in detail stop and wait protocol.
10. What is piggybacking? State its use.

Module 2 Question bank

Media Access Control

1. Explain the classification of multiple access. Also list the various protocols in each category.
2. Explain the following terms
   a. Random access
   b. Contention
   c. Collision
   d. Back-off time
   e. Vulnerable time
   f. CSMA
3. Derive the maximum throughput for the throughput expression of PURE ALOHA.
4. How slotted ALOHA is superior to Pure ALOHA? Derive the maximum throughput expression for SLOTTED ALOHA.
5. Explain the 3 persistence methods of CSMA with flow chart.
6. Explain CSMA/CD with aid of flowchart.
7. Explain CSMA/CA with aid of flowchart.

Controlled Access

1. Explain the reservation and token passing controlled access method.
2. Explain the polling controlled access method

Note: Refer problems on Pure ALOHA, Slotted ALOHA, CSMA/CD