

Exam.Code:0970
Sub. Code: 34557

2056
M.E. (Electronics and Communication Engineering)
Second Semester
ECE-1207: Advanced Computer Networks

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Unit.

x-x-x

1. Answer the following: -

- a) Define congestion control and distinguish it from flow control.
- b) What is Multiprotocol Label Switching (MPLS)?
- c) What is Address Resolution Protocol (ARP), and why is it required?
- d) What is congestion control?
- e) Define sliding window protocol? (5×2)

UNIT - I

2. A link has the following parameters:

- Bandwidth = 5 Mbps
- Packet size = 1000 bytes
- Propagation delay = 25 ms

- a) Calculate the transmission delay and end-to-end delay (ignore processing and queuing delay).
- b) Determine the bandwidth-delay product and interpret its significance. (2×5)

3. a) Explain the functions of the Network Layer in detail.

- b) Compare IPv4 and IPv6 addressing schemes with advantages. (2×5)

4. a) Explain different types of network topologies with advantages and disadvantages.

- b) Discuss the working of Domain Name System (DNS) in detail. (2×5)

P.T.O.

(2)

UNIT - II

5. a) Explain traffic shaping mechanisms: leaky bucket and token bucket.
b) A video conferencing application suffers from delay and jitter.
- Identify QoS issues
 - Suggest suitable QoS techniques
- (2x5)
6. Discuss various network security mechanisms, including firewalls, encryption, and intrusion detection systems.
- (10)
7. a) Explain symmetric-key and asymmetric-key cryptography with examples.
b) Describe the working of digital signatures and their importance in secure communication.
- (2x5)

x-x-x