

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-IV(NEW) – EXAMINATION – SUMMER 2019****Subject Code:2140709****Date:13/05/2019****Subject Name: Computer Networks****Time:02:30 PM TO 05:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) What do you mean by Client-Server Architecture? Discuss its advantages and disadvantages. **03**
- (b) Define and explain following terms in brief: **04**  
(i) Delay (ii) Throughput (iii) Loss (iv) Protocol
- (c) Differentiate IP Stack and OSI Reference Model with suitable diagram. **07**
- Q.2** (a) What is congestion? List the approaches congestion control. **03**
- (b) Differentiate between Connection-Oriented and Connection-Less Services **04**
- (c) Discuss your understanding of a Network Topology? Explain different types of Network Topologies. **07**
- OR**
- (c) What is Routing Loop? Discuss Routing Loop Avoidance Techniques. **07**
- Q.3** (a) Write short note on Domain Name Server (DNS). **03**
- (b) What is Socket? Explain its importance at Transport Layer Protocols. **04**
- (c) Explain Connection Establishment and Connection Release in Transport Protocols. **07**
- OR**
- Q.3** (a) Discuss the principles of Reliable Data Transfer. **03**
- (b) What is HTTP? Compare its persistent and non-persistent types with request-response behavior of HTTP. **04**
- (c) Explain Distance Vector Routing Algorithm. **07**
- Q.4** (a) Explain the working of Sliding Window Protocol. **03**
- (b) Compare IPv4 and IPv6. **04**
- (c) What is a Virtual Circuit Network? How it differs from circuit switching network. Discuss with example. **07**
- OR**
- Q.4** (a) Explain Ethernet header with suitable diagram. **03**
- (b) What is IP address and what do you mean by Subnet? Enlist different IP address Classes. **04**
- (c) Differentiate between Multiplexing and Demultiplexing with suitable example. **07**

- Q.5** (a) Explain CRC with example. **03**  
(b) How TDM and FDM are useful in Channel Partitioning? **04**  
(c) Discuss slotted ALOHA protocol in detail. **07**
- OR**
- Q.5** (a) Discuss the parity checks for error detection in data transfer. **03**  
(b) Differentiate broadcast and multicast with their functionalities. **04**  
(c) Explain IPV4 Datagram Format in detail with suitable diagram. **07**

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