

# Satyug Darshan Institute of Technology, Faridabad

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|-------------------------------------------|------------------------------------|
| <b>Programme: BCA</b>                     | <b>Year:/Semester: 3rd/6th</b>     |
| <b>Subject Name : High Speed Network</b>  | <b>Subject Code:<br/>BCG-108-V</b> |
| <b>Department: CSE</b>                    | <b>AY:2025-2026</b>                |
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## Unit -1

### Short Questions

| <b>S. No.</b> | <b>Questions</b>                            | <b>Bloom Taxonomy(KL)</b> |
|---------------|---------------------------------------------|---------------------------|
| <b>Q.No</b>   | <b>Question</b>                             | <b>BT</b>                 |
| 1             | Define High Speed Network.                  | L1                        |
| 2             | What is Frame Relay?                        | L1                        |
| 3             | Define Asynchronous Transfer Mode (ATM).    | L1                        |
| 4             | What is an ATM Cell?                        | L1                        |
| 5             | What is ATM Logical Connection?             | L1                        |
| 6             | List ATM Service Categories.                | L1                        |
| 7             | What is AAL in ATM?                         | L1                        |
| 8             | Define Fast Ethernet.                       | L1                        |
| 9             | What is Gigabit Ethernet?                   | L1                        |
| 10            | What is Fiber Channel?                      | L1                        |
| 11            | List any two applications of Wireless LANs. | L1                        |
| 12            | What are the requirements of Wireless LANs? | L1                        |
| 13            | What is IEEE 802.11?                        | L1                        |
| 14            | What is the need for High Speed LANs?       | L2                        |

### Long Questions

|   |                                                        |    |
|---|--------------------------------------------------------|----|
| 1 | Explain Frame Relay Network architecture with diagram. | L2 |
| 2 | Explain ATM protocol architecture in detail.           | L2 |
| 3 | Describe ATM logical connections and virtual paths.    | L2 |
| 4 | Explain ATM cell format with neat diagram.             | L2 |
| 5 | Discuss ATM service categories with applications.      | L2 |
| 6 | Explain different types of AAL and their functions.    | L2 |
| 7 | Compare Fast Ethernet and Gigabit Ethernet.            | L4 |
| 8 | Explain architecture of IEEE 802.11 Wireless LAN.      | L2 |

## Unit -2

### Short Questions

| <b>S. No.</b> | <b>Questions</b>   | <b>Bloom Taxonomy</b> |
|---------------|--------------------|-----------------------|
| 1             | Define Congestion. | L1                    |

|    |                                         |    |
|----|-----------------------------------------|----|
| 2  | What is Traffic Management?             | L1 |
| 3  | What is Queuing Analysis?               | L1 |
| 4  | Define Queuing Model.                   | L1 |
| 5  | What is Single Server Queue?            | L1 |
| 6  | List effects of congestion.             | L1 |
| 7  | What is Congestion Control?             | L1 |
| 8  | What is Packet Switching Congestion?    | L1 |
| 9  | What is Frame Relay Congestion Control? | L1 |
| 10 | Why congestion is harmful in networks?  | L2 |

### Long Questions

|   |                                                                     |    |
|---|---------------------------------------------------------------------|----|
| 1 | Explain queuing analysis and its importance.                        | L2 |
| 2 | Explain different queuing models used in networks.                  | L2 |
| 3 | Describe single server queue model with example.                    | L3 |
| 4 | Discuss effects of congestion on network performance.               | L4 |
| 5 | Explain congestion control techniques in packet switching networks. | L2 |
| 6 | Explain Frame Relay congestion control mechanism.                   | L2 |

## Unit -3

### Short Questions

| S. No. | Questions                        | Bloom Taxonomy |
|--------|----------------------------------|----------------|
| 1      | What is TCP Flow Control?        | L1             |
| 2      | Define TCP Congestion Control.   | L1             |
| 3      | What is Retransmission in TCP?   | L1             |
| 4      | What is RTO?                     | L1             |
| 5      | What is Exponential RTO Backoff? | L1             |
| 6      | What is Karn's Algorithm?        | L1             |
| 7      | Define Window Management.        | L1             |
| 8      | What is ABR Traffic?             | L1             |
| 9      | What is RM Cell?                 | L1             |
| 10     | Expand GFR.                      | L1             |

### Long Questions

|   |                                                     |    |
|---|-----------------------------------------------------|----|
| 1 | Explain TCP flow control using sliding window.      | L2 |
| 2 | Describe TCP congestion control algorithms.         | L2 |
| 3 | Explain retransmission and timer management in TCP. | L2 |
| 4 | Explain Karn's Algorithm with example.              | L3 |
| 5 | Analyze performance of TCP over ATM.                | L4 |
| 6 | Explain ABR traffic management and rate control.    | L2 |

## Unit -4

### Short Questions

| S. No. | Questions                                 | Bloom Taxonomy |
|--------|-------------------------------------------|----------------|
| 1      | What is Integrated Services Architecture? | L1             |
| 2      | Define Quality of Service (QoS).          | L1             |

|                       |                                                              |    |
|-----------------------|--------------------------------------------------------------|----|
| 3                     | What is Fair Queuing (FQ)?                                   | L1 |
| 4                     | What is Processor Sharing (PS)?                              | L1 |
| 5                     | Define GPS.                                                  | L1 |
| 6                     | What is Weighted Fair Queuing (WFQ)?                         | L1 |
| 7                     | What is Random Early Detection (RED)?                        | L1 |
| 8                     | What is Differentiated Services?                             | L1 |
| <b>Long Questions</b> |                                                              |    |
| 1                     | Explain Integrated Services Architecture and its components. | L2 |
| 2                     | Explain various queuing disciplines used in IntServ.         | L2 |
| 3                     | Explain FQ, PS, BRFQ, GPS and WFQ.                           | L2 |
| 4                     | Explain Random Early Detection (RED) mechanism.              | L2 |
| 5                     | Compare Integrated Services and Differentiated Services.     | L4 |
| 6                     | Design a QoS framework using Differentiated Services.        | L6 |