

MASTER OF COMPUTER APPLICATIONS (MCAOL)

1) ALOHA (Pure / Slotted / Throughput / Vulnerable Period)

Appears 6 times

- Throughput of Pure ALOHA
- Difference Pure vs Slotted ALOHA
- Vulnerable period
- Throughput-load diagram

Years:

June-2023, Dec-2023, June-2024, Dec-2024, June-2025

2) Leaky Bucket vs Token Bucket

Appears 4 times

Years: June-2023, Dec-2023, June-2024, Dec-2024

3) Stop-and-Wait ARQ / Flow Control

Appears 5 times

Topics:

- Stop & Wait flow control mechanism
- Limitations
- ARQ (Stop-and-Wait / Selective Repeat)
- Piggybacking with diagram

Years: June-2023, Dec-2023, June-2024, Dec-2024, June-2025

4) CRC Problems

Appears 4 times

Topics:

- CRC calculation using generator polynomial

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- CRC explanation
- Why placed in trailer

Years: June-2023, June-2024, Dec-2024, June-2025

5) OSI Model — Layers & Functions

Appears 3 times

Years: June-2023, June-2024, Dec-2024

6) Circuit Switching vs Packet Switching

Appears 4 times

Years: June-2023, June-2024, Dec-2024, June-2025

7) Routing: Link State / Distance Vector / Dijkstra / Bellman-Ford / Count-to-Infinity

Appears 5+ times

Topics:

- Link State routing
- Distance Vector
- Count to Infinity
- Dijkstra algorithm
- Bellman-Ford
- Flooding
- Virtual Circuit vs Datagram

Years: All five years

8) M2M / IoT / WSN

Appears 5+ times

Topics:

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- Features of M2M
- IoT use cases
- WSN architecture
- WSN topologies

Years: June-2023, Dec-2023, June-2024, Dec-2024, June-2025

9) Multiplexing (especially Synchronous TDM)

Appears 3 times

Years: June-2023, June-2024, June-2025

10) Fiber Optic Transmission / Propagation & Transmission Delay

Appears 3 times

Years: June-2023, June-2024, June-2025

11) Noise & Types of Noise

Appears 3 times

Years: June-2023, June-2025, June-2024 (indirect)

12) Cryptography (Basics / RSA / ECC / Block Cipher / Diffie-Hellman)

Appears 5 times

Years: June-2023, Dec-2023, June-2024, Dec-2024, June-2025

13) CSMA/CD vs CSMA/CA (or CSMA families)

Appears 3 times

Years: Dec-2023, June-2024, June-2025

14) IP Addressing / Datagram / Fragmentation

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Appears 3 times

Years: June-2023, Dec-2023, Dec-2024

15) Ethernet (10Base2 / 10BaseT / Min-Max Frame Size)

Appears 2 times

Years: June-2023, Dec-2024

16) ATM Network / Advantages / Disadvantages

Appears 2 times

Years: Dec-2023, indirectly in other years

17) Transport Layer — Services / UDP Features / QoS

Appears 4 times

Years: June-2023, Dec-2023, Dec-2024, June-2025

18) Bridges / LAN Environment / Transparent Bridge

Appears 3 times

Years: June-2023, Dec-2023, Dec-2024

19) Piggybacking

Appears 3 times

Years: Dec-2023, June-2024, June-2025

20) Congestion Control

Appears 3 times

Topics:

- Policies
- Good vs Poor routing graph

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- Open loop algorithm

Years: June-2023, Dec-2023, June-2024

MOST IMPORTANT (REPEATED IN 4 OR MORE YEARS)

1. **ALOHA (pure/slotted, throughput, vulnerable period)**
2. **Stop-and-Wait + Sliding Window + Piggybacking**
3. **Link State / Distance Vector / Dijkstra / Count-to-Infinity**
4. **Leaky bucket vs Token bucket**
5. **CRC**
6. **Circuit switching vs Packet switching**
7. **OSI layers**
8. **Cryptography basics + RSA + ECC + Diffie Hellman**
9. **Fiber optics / transmission & propagation delay**
10. **Multiplexing (especially synchronous TDM)**