



<b>Course Code</b>	: 2101CS501	<b>Date</b>	: 16-05-2024
<b>Course Name</b>	: Computer Network	<b>Duration</b>	: 150 Minutes
		<b>Total Marks</b>	: 70

**Instructions:**

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

- Q.1 (A)** Define Topology. Explain star topology with proper diagram. **4**
- (B)** Compare between LAN, MAN, and WAN. **3**

**OR**

Discuss characteristics of the computer networks.

- (C)** Draw OSI Layer model. Explain any two layers in details. **7**

**OR**

Explain guided media with example.

- Q.2 (A)** Write a short note on FTP with proper example. **4**
- (B)** Discuss why we preferred distributed design in DNS over centralized design? **3**

**OR**

Illustrate the various application layer services.

- (C)** How Email System - SMTP protocol works? Explain with example. **7**

**OR**

Describe Non-Persistent HTTP protocol with suitable example.

- Q.3 (A)** Define multiplexing and demultiplexing in transport layer. **4**
- (B)** Use checksum method, for below 8-bit data words: **3**  
10101010 11110000

**OR**

Sketch UDP header structure.

- (C)** Draw rdt 2.1 protocol. **7**

**OR**

Show how Go-Back-N protocol works with example.

**Q.4 (A)** List IP address classes with IP address range. **4**

**(B)** A host in a class C network has been assigned an IP address 192.168.17.9. Carry out the number of addresses in the block, the first address, and the last address. **3**

**OR**

An address in a block is given as 10.200.240.4. Carry out the number of addresses in the block, the first address, and the last address.

**(C)** Explain distance vector routing protocol with example. **7**

**OR**

Explain link state routing protocol with example.

**Q.5 (A)** Explain parity bit check with any example. **4**

**(B)** Define TDMA with proper example. **3**

**OR**

Define FDMA with proper example.

**(C)** Derive CRC code for below details: **7**  
Data: 100100 and  $X^3+X+1$  polynomial equation.

**OR**

Discuss the concept of pure aloha and slotted aloha.

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