ITM SLS Baroda University
SOCSET ASSIGNMENT
CN Sem 4

Assigned Dt: 26:03:2025   **Submission Dt: 01:04:2025**

1. What are the key **design issues** of the Data Link Layer?

2. Explain the significance of **framing** in data link protocols.

3. What is **error detection** and why is it important in data communication?

4. How does **even parity** help in detecting single-bit errors?

5. Explain the working of the **checksum** method for error detection.

6. Define **Cyclic Redundancy Check (CRC)** and its importance in error detection.

7. What is **Block Parity**? How does it help in detecting errors?

8. What is **Hamming Code**, and how does it correct single-bit errors?

9. What are **elementary data link protocols**? Why are they used?

10. Explain the **Utopian Simplex Protocol**. Why is it considered unrealistic?

11. How does a **Simplex Stop-and-Wait Protocol** function in an **error-free channel**?

12. What additional mechanisms are required in a **Simplex Stop-and-Wait Protocol for a noisy channel**?

13. What is the **Sliding Window Protocol**? Why is it used in data transmission?

14. Explain the difference between **Go-Back-N** and **Selective Repeat** sliding window protocols.

15. What is the significance of the **window size** in sliding window protocols?

16. Compare and contrast **error detection and error correction** techniques.

17. Explain the **CRC (Cyclic Redundancy Check) algorithm** with an example.

18. Discuss the working of the **checksum method** with a step-by-step example.

19. Describe the working of **Hamming Code** with an example of error detection and correction.

20. Explain the concept of **Stop-and-Wait Protocol** with a flowchart. What are its limitations?