Bangladesh University of Engineering and Technology
Department of Computer Science and Engineering

Course: CSE 206
Digital Logic Design Sessional

Experiment No. 9

Topic: Registers

Design and implement the following problems:

1. Design and implement a 4-bit universal shift register. You can use IC 7474 (Dual D flip-flop) for this problem.

Questions:

1. Design a 4-bit serial-in parallel-out shift register. Your register should perform two operations: serial load and rotate. You can use a 2×1 MUX for this purpose. Implement your register keeping in mind the following specification:
    - Serial load from the left.
    - Rotate left the left most 3 bits only (e.g., 1010 becomes 0110 after one rotation, 1100 after two rotations).

2. Write short note on IC 7491A.

Report:

1. Problem specification.
2. Required instruments.
3. Circuit diagram with PIN number.
4. Answer to the questions.