Module 3: Design of shift registers

Assignment 8 **Date: 25.03.2019**

9. a. Implement a 4-bit bi-directional shift register using D flip-flops, and verify its operation.

b. Configure the shift register as designed into a modulo-8 Johnson counter, and trace the waveforms on the various output lines, when the register is initialized to the all-zero state.

c. Design a 4-bit linear feedback shift register (LFSR) that generates 15 distinct pseudo random patterns (excluding all-zero) in sequence. Hence modify the circuit so that all patterns including all-zero are generated.