Dayananda Sagar College of Engineering

Department of Electronics & Communication Engineering

AAT Topics

Course name: FUNDAMENTALS OF VLSI DESIGN **Course Code:** 18EC6DCFOV

Design and simulate the following **using any circuit simulation software (CADENCE/ Microwind tool) or Verilog code:**

1. 4:1 mux using NMOS pass transistors and TGs
2. XOR using TGs and mirror circuit
3. D-flip-flop using TGs
4. Full adder using TGs
5. 4 bit array multiplier
6. 32 bit Carry skip adder
7. 32 bit Carry select adder
8. 32 bit Carry look-ahead adder
9. 32 bit Wallace tree multiplier
10. 10 bit Barrel shifter
11. adder/subtractor circuit
12. 10 bit funnel shifter using Verilog
13. CMOS circuit for RS Latch and D latch
14. Magnitude Comparator circuit as given in the text book- Neil Weste
15. 8 bit ones/zeros detector circuit
16. K = A+ B Comparator circuit
17. 4 bit Universal shift register
18. Manchester carry chain adder
19. Priority encoder CMOS circuit design
20. FIFO
21. LIFO
22. 4 bit LFSR
23. 8 bit 1's counter
24. Content Addressable memory
25. Pseudo-NMOS NAND ROM