MAULANA MUKHTAR AHMAD NADVI TECHNICAL CAMPUS

DEPARTMENT OF COMPUTER ENGINEERING

Question Bank

Subject: Digital Techniques (DTE-313303)

1. **Draw logic diagram of T flip-flop and give its truth table.**
2. **Define modulus of a counter. Write the numbers of flip flops required for Mod-6 counter.**
3. **Minimize the following expression using K-Map.**

   $f(A, B, C, D) = \Sigma m (0, 1, 2, 4, 5, 7, 8, 9, 10)$
4. **Describe the function of full Adder Circuit using its truth table, K-Map simplification and logic diagram.**
5. **Describe the working of JK flip-flop with its truth table and logic diagram.**
6. **Draw 16:1 MUX tree using 4:1 MUX.**
7. **Calculate analog output of 4 bit DAC for digital input 1101. Assume $V_{FS} = 5V$.**
8. **Design one digit BCD Adder using IC 7483**
9. **Describe the operation of R-S flip flop using NAND gates only .**
10. **Give classification of memory**
11. **State the applications of shift register.**
12. **Convert the following expression into standard SOP form. $Y = AB + A^{-} + BC$**
13. **Write down number of flip flops are required to count 16 clock pulses.**
14. **List the types of DAC**
15. **Define Half adder and draw block diagram**