Department of Electronics and Communication Engineering

CO1 Assignment Questions

1. Explain the change in MOS band structure with respect to accumulation, depletion and inversion region of operation.
2. Explain the hierarchy of steps involved in CMOS fabrication using Twin-Tub process.
3. Describe the drain current equation of a NMOS FET at different modes of operation.
4. Describe how the gate voltage affects the formation of the inversion layer in an n-channel MOSFET parameters.
5. Explain the CMOS NAND gate using stick diagram.
6. Explain the working operation of CMOS Ex-OR gate and verifying its truth table.
7. Illustrate how channel-length modulation alters the I-V characteristics of a MOSFET in the saturation region.
8. Explain the operating regions of an MOSFET (cutoff, linear, and saturation) using the I-V characteristics.
9. Describe the key steps involved in the photolithography process during the fabrication of an MOS transistor.
10. Illustrate the sequence of steps involved in fabricating nMOSFET.
11. Describe the DC transfer characteristics of CMOS having different gate voltages 0V, 1V, 2V and 4V.
12. Tabulate the I-V expressions of NMOS and PMOS field effect transistors for different modes of operation.