Madan Mohan Malaviya University of Technology, Gorakhpur

Electronics and Communication Engineering Department

DIGITAL ELECTRONICS AND COMPUTER ORGANIZATION (BEC-201)

TUTORIAL - UNIT-I

Q.1.	Convert the decimal number 260.25 to base 3, base 4, base 7, base 8, and base 16.
Q.2.	i. Convert the octal number 623.77 to decimal, binary, and hexadecimal. ii. Convert the binary number 011101010001 to octal and hexadecimal?
Q3.	Perform the subtraction with the following decimal numbers using (1) 10's complement and (2) 9's complement. a. 5250 - 321 b. 753 - 864
Q.4.	Perform the subtraction with the following binary numbers using (1) 2's complement and (2) l's complement a. 11010 – 1101 b. 10010 - 10011
Q.5.	Obtain the simplified expressions in (1) sum of products and (2) product of sums: (a) x′ z′ + y′ z′ + yz′ + x y z (b) (A + B′ + D) (A′ + B + D)(C + D)(C′ + D′)
Q.6.	Minimize the following four variable logic function using K-Map. i. $f(A,B,C,D) = A\overline{B}CD + \overline{A}BCD + \overline{A}\,\overline{B} + \overline{A}\,\overline{B}\,\overline{D} + A\overline{C} + A\overline{B}C + \overline{B}$ *ii.* $f(A,B,C,D) = ABD + BC\overline{D} + \bar{A}\bar{B}\bar{C}$
Q.7.	List and discuss different IC digital logic family.
Q.8.	Draw and explain the CMOS implementation of NOT, NAND and NOR gates.
Q.9.	Minimize the following logic function using K-map a. $F(A,B,C,D) = \sum m(1,3,5,8,9,11,15) + d(2,3)$ b. $F(A,B,C,D) = \prod M(2,3,4,5,6,7,8,11,12)$
Q.10	Compare the parameters of TTL, ECL and CMOS logic families