

VANDAYAR ENGINEERING COLLEGE

UNIT 1 Tutorial Sheet 1

Branch/Year: CSE/II
Sem : III/ Odd

Subject: Digital Principle & System Design
Faculty I/c : S. Edit Pelinda

Part A		
1	Realise OR gate Using only NAND gates	Nov 2012
2	Find the complement of $F=x(y'z'+yz)$	Nov 2012
3	Draw the logic diagram for the Boolean expression NAND gates.	Dec 2009
4	Perform subtraction using 1's complement $(11010)_2 - (10000)_2$.	Dec 2009
5	Perform 9's and 10's compliment subtraction between 18 and -24.	Dec 2009
6	Convert $(101101,1101)_2$ to decimal and hexadecimal form	June 2013
7	What are the Limitation of Karnaugh Map	June 2013
8	Perform the following code conversion $(1010.10)_{16} \rightarrow (?)_2 \rightarrow (?)_8 \rightarrow (?)_{10}$	Dec 2011
9	State the different ways for representing the signed binary numbers	Dec 2011
10	Find the octal equivalent of hexadecimal number AB.CD.	Nov 2010
Part B		
11	(i) Simplify the $F(A,B,C,D) = \sum(0,1,2,5,8,9,10)$ in sum of product and product of sum using K-map (ii) Write short notes on negative and positive logic	Nov 2012
12	(i) Simplify the $F(A,B,C,D) = \sum(1,4,6,7,8,9,10,11,15)$ using Quine -Mcclusly methods (ii) Check if NOR operator in associative	Nov 2012
13	Simplify the following Boolean expression using Quine McCluskey method : $F = \sum m(0, 9, 15, 24, 29, 30) + d(8, 11, 31)$.	Dec 2009
14	(i) Implement Boolean expression for EXOR gate using NAND and NOR gates. (ii) Prove that $(AB + C + D)(C' + D)(C' + D + E) = ABC + D$ (iii) Using 2's complement perform $(42)_{10} - (68)_{10}$	Dec 2009
15	Reduce the following Function using Karnaugh Map Technique: (i) $F(A,B,C) = \sum m(0,1,3,7) + \sum d(2,5)$. (ii) $F(w,x,y,z) = \sum m(0,7,8,9,10,12) + \sum d(2,5,13)$	June 2013
16	Simplify the Boolean expression using Quine McCluskey method : $F(A,B,C,D,E,F) = \sum m(0,5,7,8,9,12,13,23,24,25,28,29,37,40,42,44,46,55,56,57,60,61)$	June 2013
17	Simplify the following Boolean function F using Karnaugh map method: (i) $F(A, B, C, D) = \sum(1,4,5,6,12,14,15)$ (ii) $F(A, B, C, D) = \sum(0,1,2,4,5,7,11,15)$ (iii) $F(A, B, C, D) = \sum(2,3,10,11,12,13,14,15)$ (iv) $F(A, B, C, D) = \sum(0,2,4,5,6,7,8,10,13,15)$	June 2013
18	simplify the following Boolean expressions to a minimum number of literals: (i) $AC + ABC + AC$ (ii) $XYZ + XY + XY Z$ (iii) $XY + YZ + XY Z$ (iv) $A B + ABD + AB D + AC D + ABC$ (v) $BD + BC D + A BC D$	June 2013
19	Simplify the following 5 variable Boolean expression using McCluskey method. $F = \sum m(0,1,9,15,24,29,30) + d(8,11,31)$	Nov 2010
20	Determine the minterm sum of product form of the switching function. $F = \sum m(0,1,4,5,6,11,14,15,16,17,20,22,30,32,33,36,37,48,49,52,53,59,63)$.	Nov 2010

Date of Submission: