Department of Information & Communication Technology

(Manipal Institute of Technology, Manipal 576104.)

Subject: Digital Systems ICT – 2102

3rd Sem . B.Tech Information Technology **Assignment – 1**

Date: 18/08/2015

1. Simplify the logical expressions F(A,B,C,D) = ∑M(0,1,2,4,5,6,7,8,9) + d(10,12,15) using K-Map and implement using (i)NOR gates only. (ii) NAND gates only

2. Simplify the logical expressions F(A,B,C,D) = ΠM(1,5,10,14) + d(0,4,9,11,13) using K-Map and implement using (i)NOR gates only. (ii) NAND gates only.

3. Using K-map, find the simplest sum of products form for the function F(VW,X,Y,Z) = ∑m(0,1,2,3,6,7,11,15,16) + D(17,19,23,27,31) and implement using NOR gates only.

4. Using K-map, find the simplest sum of products form for the function F(VW,X,Y,Z) = Π M(0,1,2,3,6,7,11,15,16) . D(17,19,23,27,31) and implement using NAND gates only.

5. Write the (i) simplified SOP & POS and
   (ii) Sum of minterms and product of maxterms logical expressions for the circuit given below