Practise Questions

1. Base conversion:
   1. (234)10 to binary, octal, hexadecimal, BCD and base-6.
   2. (100010101)2 to decimal, hexadecimal, Octal, Excess 3 and base-4.t
   3. 15.62510 to binary, octal, hexadecimal
   4. 724.168 to decimal, binary and hexadecimal
2. Give the formula for finding the radix complement and diminished radix complement. Find radix complement and diminished radix complement for each of the following numbers. (using formula and also shortcut method. Then verify your answer)
   1. (111100010)2
   2. (B21)12
3. Write the following decimal weighted codes:
   1. 7 4 2 1
   2. 5 2 1 1
4. Find the complement of *F* = WX + YZ;then show that ****and ****.
5. Determine the form in which the following expression is and convert into the other three representations
   1. *F* (*x, y, z*) = ∑ (1, 3, 5)
   2. *F* (*A, B, C, D*) = π (3, 5, 8, 11)
   3. 
   4. 
6. Describe the physical properties of logic gate with respect to IC logic families.
7. Write the Boolean expression (in sum of products form) for a logic network that will have a 1 output when X =1, Y =0, Z=0; X =1, Y=1, Z=0; X= 1, Y=1, Z=0; and X=1, Y=1, Z=1. The circuit will have a 0 output for all other set of input values. Simplify the expression derived and draw a block diagram for the simplified expression.
8. Prove that NAND and NOR operators are not distributive.
9. Show that the dual of the exclusive‐OR is equal to its complement.
10. The following Boolean expression:



Is simplified version of the expression?



1. Assuming that the inputs ABCD = 0101, ABCD = 1001, ABCD = 1011 are unused, find a simplified SOP and POS expressions for

