ASSIGNMENT WEEK 1

Topics: Number systems, Boolean algebra simplification

1) Simplify (~A+B)(A+B)
2) Simplify XY+YZ+(~X)Z
3) Convert the binary number 1101101111110101 to hex.
4) Convert the hex number ABC7 to binary.
5) Convert the following binary numbers to equivalent decimal numbers.
   •(a) (1101)2 • (b) (11101)2 • (c) (0101 1101)2 • (d) (1101 1101)2
6) Convert the following decimal numbers to equivalent binary numbers.
   •(a) (57)10 • (b) (45)10
7) Convert the following octal numbers to equivalent decimal numbers.
   (a) (45)8 • (b) (2243)8
8) Convert the following decimal numbers to equivalent octal numbers.
   • (a) (19)10 • (b) (132)10 • (c) (512)10

9)Perform the following unsigned binary arithmetic. Verify your answer by converting each problem into decimal

   a) 0111 0101 + 0011 0011
   b) 0101 1100 + 0001 1111

10) a) Gray code for decimal number 5 is _____

   b) Binary code for gray value (11001) is _____

   c) BCD representation of $(358)_{10}$ is ____