Practise Assignment/Test
November 2022

<u>Group A-</u>

This section comprises of 3 MCQ questions for 3 marks each

1. **The decimal equivalent of Binary number $(110110000.0101101)_2$ is**
   A. $(412.3025)_{10}$ B. $(432.3025)_{10}$
   C. $(432.3515)_{10}$ D. $(412.3515)_{10}$

2. **Demonstrate, which of the following equations is/are valid.**
   (I) $(x + y)(x' + y)(x + y')(x' + y') = 0$
   (II) $xy + x'y' + x'yz = xyz' + x'y' + yz$
   (III) $xyz + wy'z' + wxz = xyz + wy'z' + wxy'$
   (IV) $xy + x'y' + xy'z = xz + x'y' + x'yz$

   A. I, III, IV   B. I, II, IV
   C. All of the above   D. I, II, III

3. **With the aid of a map, minimize the function**
   $f(v,w, x, y, z) = (1, 2, 6, 7, 9, 13, 14, 15, 17, 22, 23, 25, 29, 30, 31)$

   A. $f(v,w, x, y, z) = xyz' + w'x'z' + x'y' + vwy'z$
   B. $f(v,w, x, y, z) = x'y'z + wxz + xy + v'w'yz'$
   C. $f(v,w, x, y, z) = x'y'z + w'x'z' + x'y' + v'w'yz'$
   D. $f(v,w, x, y, z) = wxz + xy + v'w'yz'$

<u>Group B-</u>

This section comprises of 11 MCQ questions for 1 marks each

1. **DeMorgan's first theorem shows the equivalence**
   A. OR gate and Exclusive OR   B. NOR gate and Bubbled AND
   C. NOR gate and NAND   D. NAND gate and NOT

2. **The NAND gate output will be low if the two inputs are**
   A. 00   B. 01
   C. 10   D. 11

3. **When simplified with Boolean Algebra $(x + y)(x + z)$ simplifies to**
   A. x   B. $x + x(y + z)$
   C. $x(1 + yz)$ D. $x + yz$

4. **The excess 3 code of decimal number 26 is**
   A. 0100 1001   B. 01011001
   C. 1000 1001   D. 01001101

5. **What is the binary equivalent of the decimal number 368**
   A. 101110000   B. 110110000
   C. 111010000   D. 111100000

6. **The decimal equivalent of hex number 1A53 is**
   A. 6793   B. 6739
   C. 6973   D. 6379

7. **The decimal equivalent of $(1100)_2$ is**
   A. 12   B. 16
   C. 18   D. 20

8. **When an input signal A=11001 is applied to a NOT gate serially, its output signal is**
   A. 00111.   B. 00110.
   C. 10101.   D. 11001.

9. **Karnaugh map is used for the purpose of**
   A. Reducing electronic circuits used.
   B. To map given Boolean logic function.
   C. To minimize terms in a Boolean expression.
   D. To maximize terms in a Boolean expression.

10. **The 2's complement of the number 1101110 is**
    A. 0010001.   B. 0010001.
    C. 0010010.   D. None.

11. **How many two input AND gates and two input OR gates are required to realize**
                          Y = BD+CE+AB
    A. 1, 1   B. 4, 2
    C. 3, 2   D. 2, 3