Tutorial – 3 (Questions)

1. Perform the following arithmetic operation using 12-bit 1's complement arithmetic.
    a. 68.75 – 27.50
    b. 43.25 – 89.75
2. Perform the following arithmetic operation using 12-bit 2's complement arithmetic.
    a. 87.5 – 45.75
    b. 27.125 – 79.625
3. Perform the following subtraction operation using (i) diminished radix complement and (ii) radix complement method in base - 3.
    a. 212-121
    b. 121-212
4. Subtract the following numbers using 10's complement method.
    a. 2928.54 – 416.73
    b. 416.73 – 2928.54
5. Perform the following numbers using 9's complement method.
    a. 745.81 – 436.62
    b. 436.62 – 745.81
6. Do the following arithmetic operations in base - 2.
    a. 110101.11 / 101
    b. 1011.101 * 101.01
    c. 1010.010 – 111.111
    d. 1101.101 + 111.011
7. Write the following binary numbers in sign magnitude form, in sign 1's complement form, and in sign 2's complement form using 16-bit register.
    a. +1001010
    b. -11110000
8. Consider n – bit 1's complement representation of integer numbers. Find the range of integer values N that can be represented?
9. Consider n – bit 2's complement representation of integer numbers. What is the range of integer values that can be represented in this system?