Practice Assignment No 01 : Fall 2021

Problem No 01

Given the two unsigned numbers $X=(9BE.F)_{16}$ and $Y=(5142.043)_{6}$

a. Perform subtraction X-Y using1's complement.
b. Convert your answer to Excess-3 and Gray codes.

Problem No 02

Given the two signed numbers $A= -(29)_{10}$ and $B= + (85)_{10}$. Perform the subtraction A-B using 2's complement method. Indicate whether overflow occurs.

Problem No 03

Perform the following conversions

$(01101001.101)_{2}$ to Excess-3 form

Problem No 04

A video camera is placed over a disc driven by moving shaft of a motor. The camera could be rotated 360 degrees in steps of 10 degrees. The angular position is detected by employing Gray Code. Each 10-degree step is taken as one sector. How many bits will be needed to code each sector? Write down first twenty gray codes for the sectors