# **NIELIT Gorakhpur**

Course Name: A Level (1st Sem)

**Topic: Binary Addition and Subtraction contd.** 

Subject: CO

Date: 29-04-20

#### Addition of positive and negative (+ve) + (-ve):

**Ex.2-** Find the sum of  $(+27)_{10} + (-23)_{10}$ 

Here we see that subtrahend is negative hence we calculate 2's complement of 23.



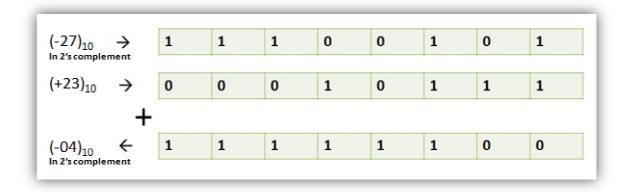
Thus the result is-  $(00000100)_2 = (+04)_{10}$ 

Note that  $(+27)_{10} + (-23)_{10}$  will also be  $(+04)_{10}$ 

## Addition of negative and positive (-ve) + (+ve):

**Ex.3-** Find the sum of  $(-27)_{10} + (+23)_{10}$ 

Here we see that minuend is negative hence we calculate 2's complement of 27.



Thus the result is-  $(111111100)_2 = (-04)_{10}$  **{2's of 00000100}** 

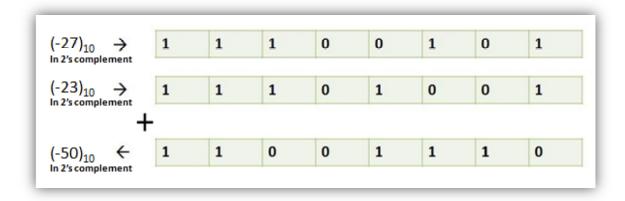
Note that  $(-27)_{10} + (+23)_{10}$  will also be  $(-04)_{10}$ 

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#### Addition of negative and negative (-ve) + (-ve):

**Ex.4-** Find the sum of  $(-27)_{10} + (-23)_{10}$ 

Here we see that both the minuend and the subtrahend are negative hence we calculate 2's complement of both.



Thus the result is-  $(11001110)_2 = (-50)_{10}$  **{2's of 00110010}** 

Note that  $(-27)_{10}$  +  $(-23)_{10}$  will also be  $(-50)_{10}$ 

## **Assignment:**

- 1. Add (+34)<sub>10</sub> and (-41)<sub>10</sub> and find the sum.
- **2.** Add  $(-34)_{10}$  and  $(+41)_{10}$  and find the sum.
- 3. Add  $(-34)_{10}$  and  $(-41)_{10}$  and find the sum.