**Dept. of EEE, EWU, Summer 2014**

Course Name : Digital Logic Design

Course Code : EEE205

Experiment No : 06

Name of the Experiment : Implementation of Excess-3 Code Converter.

Date of Performance : 24/06/2014

Date of submission : 25/06/2014

Group no. : 01

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**Objective of the Experiment:**

In this particular experiment, we have implemented BCD-to-Excess-3 code converter and then tested it. After that, the operation of a 7-segment display decoder was tested.

Name of the IC’s and other equipments:

1. 1 pc IC 7483
2. 1 pc IC 7447
3. 1 pc common anode 7 segment display
4. Trainer Board
5. 1kΩ resistance

Circuit diagram:



Figure: Diagram of the lab experiment setup.

Note: For this setup, Inputs must be applied as B3B2B1B0 to see the valid outputs of the BCD inputs 0000 to 1001

**Answer to the Report Questions**

**Answer to the Question 01**

BCD-to-Excess-3 code is a adder circuit. It adds binary number 11 with any input binary number and gives the resultant as output.
The operation of excess three code is simple. It is based on adder circuit. It adds 11 with the input BCD. For example, if we take 0100 as an input, the output will be 0100+0011=0111.

For these, this converter is called BCD-to-Excess-3 code converter.

**Answer to the Question 02**

Last three digits: 02210

BCD equivalent: 0000 0010 0010

Binary equivalent:1\*00000010+1\*00010100=00010110

Excess-3 code: 10110+00011=11001

So, Binary equivalent of last three digits of my ID using Excess-3 code is: 11001

**Conclusion:** This experiment shows us the properties of BCD and also how to operate a seven segment display with BCD. We have to cheak the IC numbers carefully that, is it functioning or not. If there is any problem in7447 IC, signal will not transmit toward the 7 segment display.