**School of Electrical Engineering and Computer Science**
*National University of Sciences & Technology (NUST)*

# Home Assignment No-1[CLO1]

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| Subject: | **Digital Logic Design** | Marks: | **50** |
| Course: | **BEE-12CD** | Issue: | **03 Oct 2021** |
| Teacher: | **Engr. Arshad Nazir** | Due on: | **08 Oct 2021** |
| | | | *(10:00 AM)* |

***Note:***

- ✓ *Attempt the given problem set. Make an index showing summary of the problems solved with page numbers and also specify the missing ones. Follow the sequence of Title page, Non-plagiarism certificate, table of contents, and problems sequentially attempted.*
- ✓ *No late submissions will be accepted unless a prior approval from the teacher is obtained with extremely genuine reasons. The assignments submitted after the due date/time will be graded **zero**.*
- ✓ *University has zero tolerance for plagiarism and serious penalties apply. Assignments found mutually copied will be marked **zero**.*
- ✓ *The students will submit a certificate with the assignment work stating the originality of their efforts and non-copying from others.*
- ✓ ***Five** marks are reserved for neat and clean work, table of contents, and certificate to be attached with the assignment work.*

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**Problem No-1** Convert the following numbers from the given base to the indicated bases:

a. $*356.89_{10}=(\ )_{16}=(\ )_{8}=(\ )_{2}$
b. $DEC.A_{16}=(\ )_{10}=(\ )_{8}=(\ )_{2}$
c. $111010110001.011_{2}=(\ )_{16}=(\ )_{10}=(\ )_{8}$
d. $3BA.25_{14}=(\ )_{6}$
e. Noting that $3^2=9$, formulate a simple procedure for converting base3 numbers directly to base9. Use the procedure to convert $211020110222011.2_3$ to base9.

*show fractional part conversions rounded off to four base points, where applicable.

**Problem No-2** Perform the subtraction A-B on the following signed binary numbers using 1's complement method. Indicate if an overflow occurs. Verify your result through decimal arithmetic.

$A=11101000.10_2$; $B=10000000.11_2$

Redo the problem using 2'complement method.

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**"Good Luck"**