INTRODUCTION TO COMPUTER ORGANIZATION AND ARCHITECTURE

**TUTORIAL 4**

Q1. Add the numbers below in scientific notation:

1. 51.28 + 2.93
2. 0.00123 + 0.00035792
3. 8101.82 + 7102.91
4. 567673 + 2346.7

Q2. Subtract the numbers below in scientific notation:

1. 052 12312 – 051 12561
2. 053 71901- 053 51914
3. 051 82517 - 050 16729
4. 052 71928 – 052 18190

Q3. Multiply and divide the numbers below in scientific notation:

1. 051 78192 and 051 78912
2. 053 78101 and 051 10272
3. 051 12901 and 050 71901
4. 054 27891 and 052 89113

Q4. Consider a shortened IEEE format, floating point numbers are represented in a 12-bit format as follows.

* 1 bit for sign
* 5-bit, excess-15 exponent
* 6-bit, mantissa, normalized as in the IEEE format, with an implied 1 to the left of the binary point.
  1. Represent the number A=5.6875 in this format.
  2. Perform A- B where B = 1 01111 101010. Use rounding if necessary.

Q5. Show the bit sequence that represents the decimal number 365 in binary, BCD and ASCII (without error checking: append a 0 to MSB to get 8 bits).