PracticeSet 1: Based on Number System ,Conversion And Binary Arithmetic ::-

1. Convert the following Numbers to their Binary equaivalent
   (a)123 (b) 167 (c) 72.45 (d) 4097.188 (e) 0.4475

2. Convert the following Binary Numbers to their Decimal ,Octal and Hexadecimal equivalent.
   (a)10110 (b) 10001101 (c) 10111.1011 (d) 0.0111011 (e)1011.011

3. Convert the following Decimal Number to Octal and Hexadecimal.
   (a) 102 (b) 547 (c) 72.54 (d) 675.098 (e) 0.6548

4. Convert the following Hexadecimal number to Binary and Decimal.
   (a) 49 (b) 5C8 (c) FB17 (d) 4A .67 (e) 8109.4A

5. Convert the following Octal number to Hexadecimal and Binary.
   (a) 137 (b) 4163 (c) 775 (d) 673 (e) 4453

6. Add the following Binary numbers using binary addition.
   (a) 1010 + 1100 (b) 1111 + 1101 (c) 1011.0111 + 1101.101
   (d) 1110.1011 + 1001.1110 (e) 10011.011 + 1001.01

7. Perform the subtraction for the following groups of Binary numbers, using 1's complement and 2's complement.
   (a)11101 – 11001 (b) 110111 – 100110 (c) 10111 – 11111
   (d) 10110.1 – 1100.01 (e) 1110.1011 – 100.11 (f) -99 and +62
   (g) -48 and +31 (h) -75 + (-5) indicate the overflow condition.

8. Perform the Multiplication of following Binary numbers.
   (a)1011 * 110 (b) 10111 *101 (c) 1001.11 * 110 (d) 1110.11* 101

9. Perform the Division of following Binary numbers.
   (a) 100111 by 1001 (b) 111111 by 1001 (c) 10111 by 100
   (e) 10110.1101 by 11.1

10. Using 2's Complement perform the following arithmetic operation using 8 bit register.

(a)25 +(-12) (b) 13 - 8 (c) -19 – 17 (d) -8 + 18 (e) 12 - (-9) [IGNJune 2009]
Also write overflow / underflow in any.

11. Find the 1's and 2's Complement for the following fixed-point numbers.
(a)1100101 (b) 00110011 [IGNJune – 2008]

12. Convert the following : [IGNJune -2008]
(a)Decimal number 56.125 to Binary.
(b) Binary number 1011.0101 to Octal.
(c) Decimal number 123.5625 to Binary, Octal and Hexadecimal.

13. Convert the BCD number 642.59 to the following.[IGNDec- 2007]
(a)Binary number (b) Decimal number (c) Hexadecimal (d) Octal