Assignment 1

Number Systems

1. What is a digital computer and explain its block diagram with figure.
2. Convert Decimal Number 250.5 to base 3, base 4, base 7, base 16 and base 8
3. Convert Decimal Number 255.225 to binary, octal and hexadecimal
4. Convert the following Number as directed
   a) 52 base 10 = (_____) base 2
   b) 101001011 base 2 = (_____) base 10
   c) 11101110 base 2 = (_____) base 8
   d) 68 base 10 = (_____) base 16
5. Convert following hexadecimal number to decimal : B28, FFF, F28
6. Convert following octal to hexadecimal and binary : 414, 574,725.25
7. Convert the following number to decimal
   a) 10001.101
   b) 101011.11101
   c) $(0.365)_8$
   d) A3E5
   e) CDA4
   f) 11101.001
   g) B2D4

8. Write first 10 decimal numbers in base 11, base 7 and base 12 number system.

8. Perform subtraction with following binary number using 1's complement and 2's complement
   a) 11010-1101
   b) 10010-10011
   c) 100-110000
   d) 11010-10000
9. Explain comparison between 1's and 2's complements with appropriate example
10. Explain different types of binary codes in detail.
11. Explain in detail Alphanumeric Codes.
13. Explain Binary Logic and show all truth tables of logical operations.
14. Explain all Logic Gates with their symbols and truth table.