MOST IMP QUESTIONS

1. Convert $(367.52)_{10}$ to binary and $(1001011)_2$ to Decimal & Convert $(A6C7)_{16}$ to binary and $(11000101011010)_2$ to hexadecimal.
2. Convert $(110101.101010)_2$ to octal and $(367)_8$ to binary.
3. Find out 10's and 9's complement of 572.
4. Explain 1's complement and 2's complement with suitable Example. Show the subtraction using complements.
5. Explain Gray code.
6. Explain all logic gates.
7. Explain NOR as a universal gate.
8. Explain NAND as a universal gate.
9. State the De-Morgan's theorems.
10. Draw the logic circuit using basic gates Y= (A'+B'+C)(A+B'+C) & Simplify the equation Y=AB+ABC +A' using Boolean algebra.
11. Define Max term, Min term, Product term, Sum term.
12. Draw K-map for 3 variables.
13. Simplify and draw a digital circuit for the following equation. F = ∑m(0,2,6,10,11,12,13) Don't care d(3,4,14,15)
14. Simplify POS expression using K-map method for F (A, B, C, D) = ∏M (0, 1, 8, 9, 10) and implement using NOR logic.
15. Represent the following expression in POS form. Y = (A+C'+D') (A'+C') (B'+D')
16. Draw half adder circuit and write its truth table
17. Draw and explain Binary 4-bit parallel adder circuit.
18. Explain half subtractor with its block diagram and draw a logic circuit of full subtractor using two half subtractor.
19. Explain 4-2 Encoder & 2-4 Decoder.
20. 6. Explain 4-1 Multiplexer & 1-4 Demultiplexer.
21. Compare combinational circuit and sequential circuit.
22. Explain SR flip flop with symbol, logic circuit & truth table.
23. Explain JK flip flop with symbol, logic circuit & truth table.
24. Explain D flip flop with symbol, logic circuit & truth table.
25. Explain T flip flop with symbol, logic circuit & truth table.