2. Convert the following to binary system.
3. (1141.26)10 ii) (2020.2020)10 iii) (108.100)2
4. Find the gray codes for the following binary numbers.
5. (10101010)2
6. (11110000)2
7. (11001100)2
8. (10100000)2
9. (11001111)2
10. Find the compliment of the following expressions.
11. xy’+x’y
12. (x+y’+z)(x’+z’)(x+y)
13. (AB’+C)D’+E
14. State and prove the demorgans laws.
15. Simplify the following Boolean function F, together with don’t care conditions d, and the express the simplified function in sum of min terms form and draw the logic diagram using NAND gates.
16. F(A,B,C,D)=∑m(1,3,8,10,15)

d(A,B,C,D)=∑m(0,2,9)

1. F(A,B,C,D)=∑m(4,5,7,12,13,14)

d(A,B,C,D)=∑m(1,9,11,15)

2. Design 4\*1 multiplexer and draw the logic diagram, and write Verilog code in gate level model.
3. Construct a 16\*1 multiplexer with two 8\*1 and one 2\*1 multiplexers. Use block diagrams.
4. Explain the following for JK flip-flop.
5. Logic diagram using NAND gates.
6. Characteristic table
7. Excitation table
8. Characteristic Equation.
10. Design jhonson and ring counters and draw the logic diagrams.
11. Write the differences between sequential and combinational logic circuits
12. Write the characteristic tables of T flip-flop and and SR flip-flop.
13. Design 3 to 8 decoder and draw the logic diagram.
14. Design 8 to 3 encoder and draw the logic diagram.
16. Express the following function as a sum of minterms and as a product of maxterms.
17. Find the compliment of F=wx+yz then show that and .
19. Convert the following to octal number system.
20. (199.98)10 ii) (2008.80)10 iii) (240.99)10
21. Prove distributive laws with truth table and draw the logic diagram.
22. Simplify the following Boolean expression to a minimum number of literals.
23. (X+Y)(X+)
24. )
26. Convert each of the following expressions into sum of products and product of sums.
27. (AB + C)(B + D)ii)
28. Draw the truth tables and graphic symbols of 2-input AND gate, 2-input OR gate, 2-input NAND gate, 2-input EX-OR gate and 2-input EX-NOR gate.
29. Simplify the Boolean function and draw the logic diagram using NAND gates.
30. F(A,B,C,D)=∑m(0,1,2,4,5,6,8,912,13,14)
31. F(A,B,C,D)=∑m(1,5,9.10,11,14,15)
32. F(A,B,C,D)=∑m(0,2,4,5,6,7,810,13,15)
33. Design 4 to 2 priority encoder and draw the logic diagram.
34. Explain the following for SR flip-flop .
35. Logic diagram using NAND gates.
36. Characteristic table
37. Excitation table
38. Characteristic Equation.
39. Design 3-bit synchronous counter using D flip-flops and draw the logic diagram.
40. Design 4 bit binary to Gray code converter and draw the logic diagram.