

7. Draw Circuit Diagram of Ring Counter.
8. Define comparator in short.
9. What is buffer register? Draw the circuit of it.
10. Explain D flip-flop.
11. What is shift register? Give its type.
12. Explain Logical Addition in Boolean algebra.

Q-3 What is Gate? Explain NAND, NOR, AND, EX-OR with diagram and truth table. (10)

OR

Q-3 What is Truth Table? Explain Associative, Commutative law and Distributive law with Example. (10)

Q-4(A) Solve below k-map and form an equation, and also find pair & quad. (5)

$$N(A,B,C,D) = \sum m(2,4,8,10,12,14,15)$$

(B) Simplify this using k-map $F(A,B,C,D) = \sum(1,3,5,6,8,11,13)$ (5)

OR

Q-4(A) Explain 8x3 line encoder in detail. (5)

(B) Explain Comparator with circuit and example (5)

Q-5(A) Explain Full-Adder in detail. (6)

(B) Explain Parallel binary adder with circuit and example. (4)

OR

Q-5(A) What is Multiplexer? Draw the logic circuit of 8 X 1 and explain with truth table. (6)

(B) Explain binary adder-subtractor in detail. (4)

Q-6(A) What is Shift-left? Explain with example. (5)

(B) Explain Ring-counter in details. (5)

OR

Q-6(A) Write note on controlled buffer register. (5)

(B) Explain Edge-Trigger D-Flip Flop. (5)

*** ALL THE BEST ***