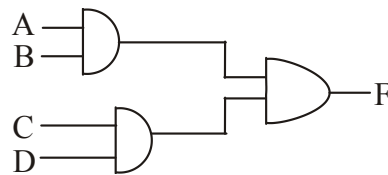


(2)

- (f) The Boolean expression for the logic circuit $F = \dots\dots$.



- (g) CMOS stands for $\dots\dots$.
(h) The memory element used in sequential circuit is called $\dots\dots$.
(i) There are $\dots\dots$ cells in a 4-variable K-maps.
(j) Excess-3 code of number 5 is $\dots\dots$.

[B] Write short answer of the following questions : 1×5

- (a) What is Truth table ?
(b) Write the name of logic family circuit.
(c) SOP and POS stands for $\dots\dots$.
(d) What is Counter ?
(e) What is Microprocessor ?

Unit-I

2. What are logic gates ? Explain the various types of logic gates used in digital devices. 15

OR

(3)

Perform the following :

(a) $(101011.01)_2 - (?)_{10}$

(b) $(A26)_{16} = (?)_2$

(c) $(123)_{10} = (?)_4$

(d) 2's complement of 19

(e) $10111 / 11$

(f) 1.1×1011

Unit-II

3. What are Semiconductor Devices ? Explain with example. 15

OR

Explain the difference between the following :

(a) NMOS and PMOS

(b) DTL and TTL

Unit-III

4. What is Boolean Algebra ? Explain the various laws of Boolean Algebra. 15

OR

Simplify the following Boolean functions :

(a) $F = (A + B)' (A' + B')'$

(b) $F = x'y'z + x'yz + xy'$

(4)

Unit-IV

5. What is combinational circuit ? Explain how 3-to-8 line decoder is constructed with Truth table and circuit diagram. 15

OR

Explain the following :

- (a) Ripple counter
- (b) Digital comparator
- (c) Adder

Unit-V

6. What is Microprocessor ? Explain the architecture of 8085 Microprocessor. 15

OR

Explain the meaning of the following 8085-Pin instruction :

- (a) CMP r
 - (b) CMP M
 - (c) PUSH r
 - (d) POP r
 - (e) JMP addr[Label]
 - (f) J2 addr[Label]
- _____