

Given the K-map for $F(A, B, C, D)$, the minimization of F in sum-of-product (SoP) notation is:

CD \ AB		AB			
		00	01	11	10
CD	00	1	1	0	1
	01	1	0	1	1
	11	1	X	0	X
	10	1	1	0	0

Select one:

- a. $F(A,B,C,D) = C'D' + B'C' + A'C' + A'BC$
- b. $F(A,B,C,D) = A'C + A'D' + B'C' + AC'$
- c. $F(A,B,C,D) = AC' + B'C' + A'C' + A'C$
- d. $F(A,B,C,D) = A'B' + A'D' + B'C' + AC'D$

Assume that $F(A,B,C) = \Sigma(0, 2, 5, 6)$ and $G(A,B,C) = \Pi(1, 2, 5, 7)$, The expression of the function $F.G'$ as a sum-of-minterms is

Select one:

- a. $\Sigma(0, 1, 2, 5, 6, 7)$
- b. $\Sigma(2, 5, 7)$
- c. $\Sigma(1, 2, 5, 7)$
- d. $\Sigma(2, 5)$

The function $F(w, x, y, z) = \Sigma m(0, 2, 5, 7, 8, 10, 12, 14, 15)$ has ____ Essential prime implicants

Select one:

- a. 3
- b. 5
- c. 2
- d. 4



Simplifying the following function to minimum number of literals in SOP form is:

$$F(A,B,C,D) = \Sigma(8,10,12,14)$$

Select one:

a. $F = A + D'$

b. $F = A'D$

c. $F = A'D'$

d. $F = AD'$

The canonical form for $F(A, B, C)$ based on the truth table below is

A	B	C	F
0	0	0	1
0	0	1	X
0	1	0	1
0	1	1	0
1	0	0	0
1	0	1	X
1	1	0	0
1	1	1	X

Select one:

- a. $\Sigma m(0,2,5)+d(1,5)$
- b. $\Pi M(0,1,2)*d(1,5)$
- c. $\Sigma m(3,4,5,6)+d(1,7)$
- d. $\Pi M(3,4,6)*d(1,5,7)$

The complement of $(x + y'z')(wx'z + w'yz')$ is

Select one:

- a. $x' \cdot (y + z) + (w' + x + z') \cdot (w + y' + z)$
- b. $(x' + yz)(w'xz' + wy'z)$
- c. $x \cdot (y' + z') + (w + x' + z) \cdot (w' + y + z')$
- d. $(x + y'z')' \cdot (wx'z + w'yz')$

The following is the truth table of a digital circuit which has two inputs (A, B) and one output F

A	B	F
0	0	0
0	1	1
1	0	1
1	1	0

the Boolean expressions of the circuit output

Select one:

- a. $F = A'B$
- b. $F = A'B + AB'$
- c. $F = AB'$
- d. $F = A'B' + AB$

The dual and the function $G = (A+B)CD' + E + F'$ is

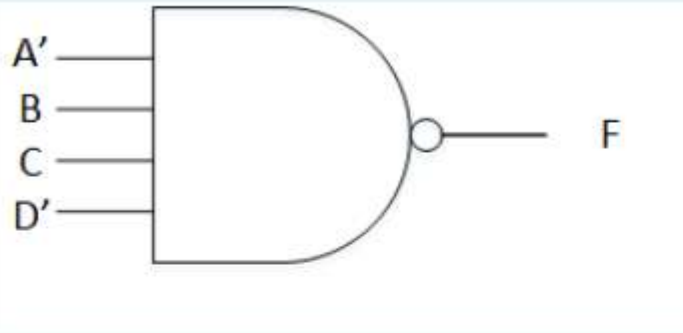
Select one:

- a. $(A+B)' (CD')' + E' + F$
- b. $(A'B'+C'+D) E' F$
- c. $[A'.B'+ C'+ D] E' F$
- d. $(AB+C+D') E F'$

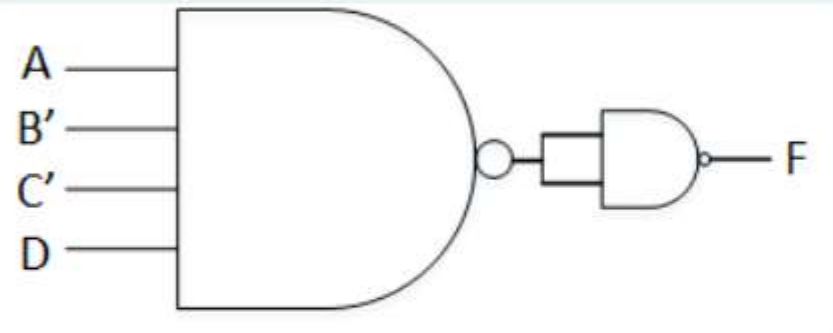
The function $F(A, B, C, D) = A' + B + D' + B'C$ can be implemented

Select one:

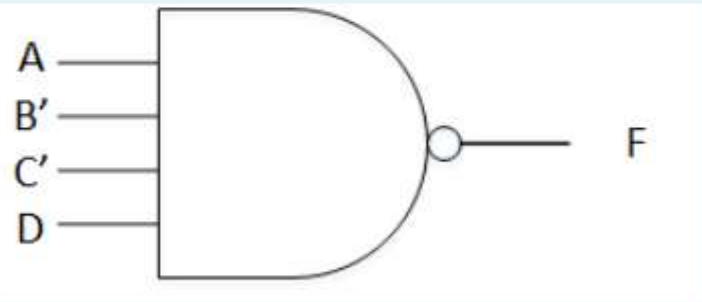
a.



b.



c.



d.

