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Computation Structures 1: Digital Circuits

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Course   Progress   Dates   Discussion   Course Notes

🏠 Course / 4. Combinational Logic / Lecture Videos (47:49)

Previous   Next

LE4.1

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Calculator

LE4.1.1: Sum-of-products

1/1 point (ungraded)

Consider the following truth table for function F:

A	B	C	F(A,B,C)
0	0	0	1
0	0	1	0
0	1	0	0
0	1	1	1
1	0	0	1
1	0	1	1
1	1	0	0
1	1	1	1

Which of the following product terms would be included in the sum-of-products expression for F?

- [x] $\bar{A}\bar{B}\bar{C}$
- [x] $A\bar{B}\bar{C}$
- [ ] $\bar{A}B\bar{C}$
- [ ] $AB\bar{C}$
- [ ] $\bar{A}\bar{B}C$
- [x] $A\bar{B}C$
- [x] $\bar{A}BC$
- [x] ABC

✔

Explanation

There will be a product for each row of the truth table where $F = 1$.

The product term for the first row is $\bar{A}\bar{B}\bar{C}$.

The product term for the fourth row is $\bar{A}BC$.

The product term for the fifth row is $A\bar{B}\bar{C}$.

The product term for the sixth row is $A\bar{B}C$.

The product term for the last row is ABC.

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ⓘ   Answers are displayed within the problem

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