

Digital Logic

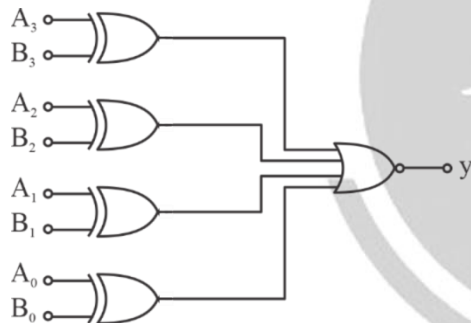
Comparator, MUX Part-I

DPP - 1

1. Let $x = x_1x_0$ and $y = y_1y_0$ be unsigned 2-bit numbers. The function $F = 1$ if $x > y$ and $F = 0$ otherwise. The minimal sum of product expression for F , is

- (a) $y_1y_0 + x_0y_0 + \overline{x_1}\overline{x_0}y_1$
 (b) $x_0\overline{y_1} + y_1\overline{y_0} + x_1\overline{x_0}$
 (c) $y_1\overline{x_1} + y_0\overline{x_1}\overline{x_0} + y_1y_0\overline{x_0}$
 (d) $x_1\overline{y_1} + x_0\overline{y_0}\overline{y_1} + x_0x_1\overline{y_0}$

2. The two 4-bit numbers $A_3 A_2 A_1 A_0$ and $B_3 B_2 B_1 B_0$ are applied to a comparator circuit shown below. A pair of correct input numbers forcing the output $y = 0$, will be



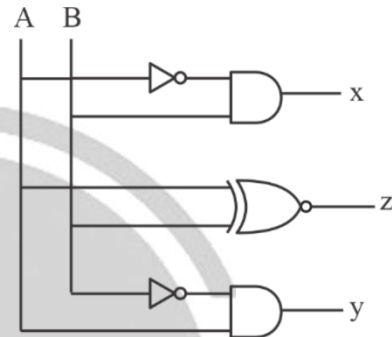
- (a) 1100, 1100 (b) 0111, 0111
 (c) 1011, 1011 (d) 1100, 1101

3. The output y of a 2-bit comparator is logic-1 whenever the 2-bit A is greater than 2-bit B the number of combination for which the output is logic -1 is ____?

- (a) 6 (b) 2
 (c) 1 (d) 7

Common Statement for Question 4 and 5

A logic Circuit is given,



4. A pair of correct input number (AB) forcing the output $x = 1$, will be

- (a) 10 (b) 01
 (c) 11 (d) 00

5. A pair of correct input number (AB) forcing the output $y_2 = 1$, will be

- (a) 00,11 (b) 01,10
 (c) 00,10 (d) 11,01

Answer Key

1. (d)
2. (d)
3. (a)

4. (b)
5. (a)



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