CS & IT English

Subject : Digital Logic
Combinational Circuit

DPP - 01

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

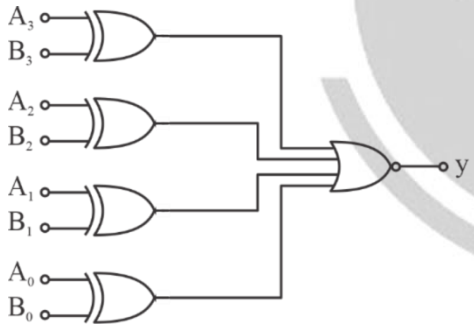
(a) $y_1y_0 + x_0y_0 + \overline{x}_1\overline{x}_0\overline{y}_1$

(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

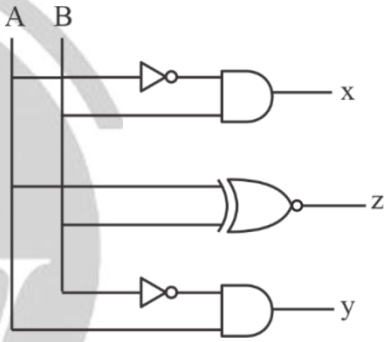
3. The output y of a 2-bit comparator is logic-1 whenever the 2-bit A is greater than 2-bit B the number of combination for which the output is logic - 1 is ____?

(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 z = 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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