IDE ASSIGNMENT

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IITH - Future Wireless Communications (FWC)

CONTENTS

I. QUESTION

The output F of the digital circuit shown can be written in the form(s)_____

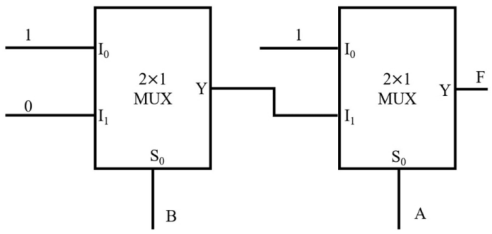

Fig. 1. 2x1 mux

(A) $\overline{A \cdot B}$
(B) $\overline{A}$+$\overline{B}$
(C) $\overline{\mathrm{A} + B}$
(D) $\overline{A} \cdot \overline{B}$

II. ANSWER

The above question can be solved by using 2x1 mux and boolean algebra. steps are given below
$\rightarrow \overline{B} \cdot I_0 + B \cdot I_1 = Y$
$\rightarrow \overline{B} \cdot 1 + B \cdot 0 = Y$
$\rightarrow Y = \overline{B}$
$\rightarrow F = \overline{A} \cdot I_0 + A \cdot I_1$
$\rightarrow F = \overline{A} \cdot 1 + A \cdot \overline{B}$
$\rightarrow F = \overline{A} + A \cdot \overline{B}$
$\rightarrow F = \overline{A} + \overline{B}$
from de-morgan's theorem
$\rightarrow \overline{A} + \overline{B} = \overline{A} \cdot \overline{B}$

III. TRUTH TABLE

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

IV. COMPONENTS

Components	Values	Quantity
Arduino	Uno	1
Jumper Wires	M-M	5
Breadboard		1

V. IMPLEMENTATION

Arduino PIN	INPUT	OUTPUT
2	A	
3	B	
13		F

VI. PROCEDURE

1. Connect the circuit as per the above table.
2. Connect inputs to Vcc for Logic 1, ground for Logic 0.
3. Execute the circuit using the below codes.

https://github.com/SrinathReddyMarri/FWC/blob/master/IDE%20platformio/mux.cpp