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DEPARTMENT; COMPUTER SCIENCE (200 Level)

COURSE; DIGITAL LOGIC DESIGNS (CSC 213)

Assignment Solution

let F = Father's input.

A = Abiola's input.

B = Busayo's input.

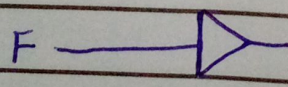
C = Carol's input.

T = Taiye's input.

K = Kehinde's input.

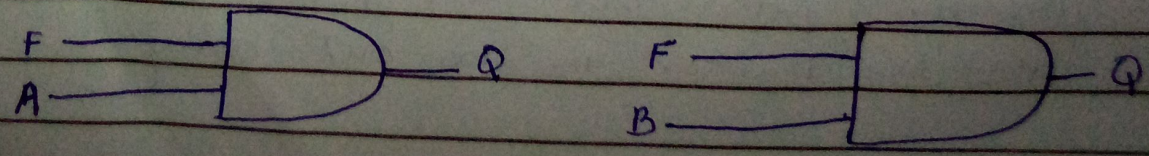
A Logic diagram that will open "door IN"

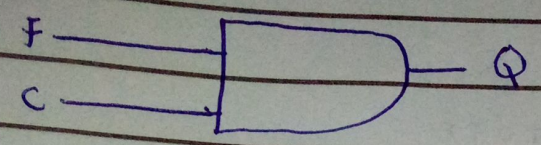
Since it's only Mr Felix' key that is required before the box opens.



B Logic circuit diagram that will enable 'door OUT' to be opened for Abiola, Busayo and Carol, their individual keys and the father's key is required to open "door OUT"

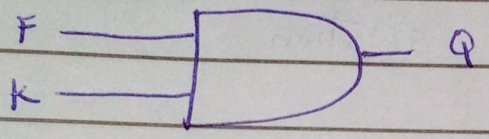
we have;



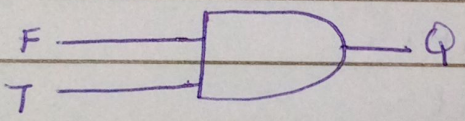


Then, for the twins (Taiye and Kenny), both of them must use their key as well as their fathers own for withdrawal

For Taiye



For Kenny;



6 Truth table for B

X	Y	X ∧ Y
0	0	0
0	1	0
1	0	0
1	1	1

The table explains that it's only 1 i.e True or the door OUT only opens when both inputs are true. i.e when the father and any of the children uses their key together, the "door OUT" opens.