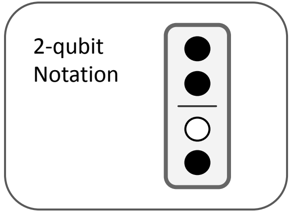


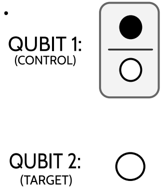
(TRUE / FALSE)

Entanglement is key to both classical and quantum computing algorithms.

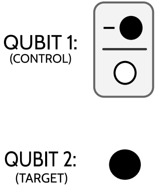
Select the option that describes the input values that can be described by the combined, 2-qubit notation:



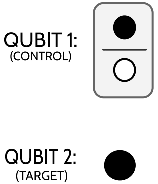
a.



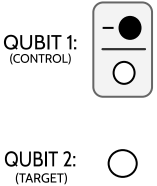
b.



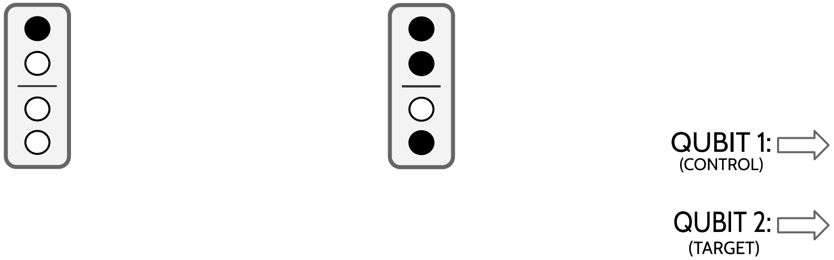
c.

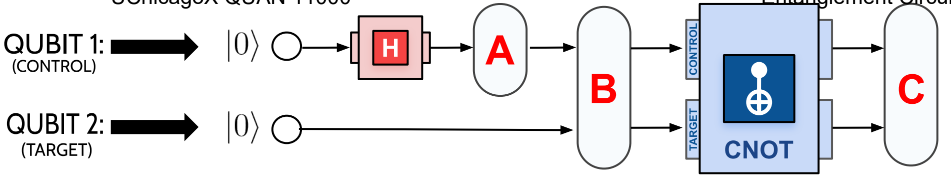


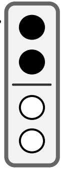
d.

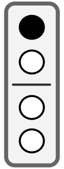


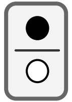
Select the option that describes the input values for Qubit 1 & Qubit 2 that can be described by the following 2-qubit notation:.

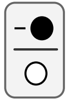




a. 

b. 

c. 

d. 

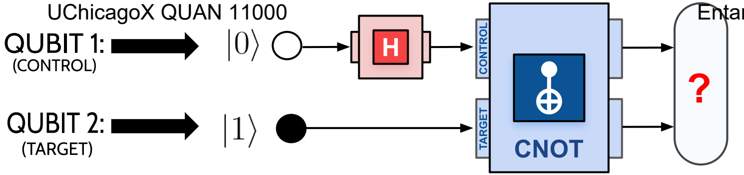
e. cannot be determined

Select the option that describes the combined 2-qubit state at **B**.

Select the option that describes the combined 2-qubit state at **C**.

UChicagoX QUAN 11000

Entanglement Circuit PQ



$a.\begin{bmatrix} 0 \\ \frac{1}{\sqrt{2}} \\ -\frac{1}{\sqrt{2}} \\ 0 \end{bmatrix}$ $b.\begin{bmatrix} 0 \\ \frac{1}{\sqrt{2}} \\ \frac{1}{\sqrt{2}} \\ 0 \end{bmatrix}$ $c.\begin{bmatrix} \frac{1}{\sqrt{2}} \\ 0 \\ 0 \\ \frac{1}{\sqrt{2}} \end{bmatrix}$ $d.\begin{bmatrix} \frac{1}{\sqrt{2}} \\ 0 \\ 0 \\ -\frac{1}{\sqrt{2}} \end{bmatrix}$ $e.$ cannot be determined

Select the option that describes the result vector at ?.