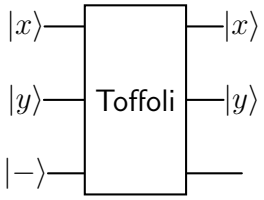
11 June 2025

QUIZ 5

Question 1: Consider the following circuit.



Let $|-\rangle$ be equal to the state $H|1\rangle$. Let $a_{00}, a_{01}, a_{10}, a_{11}$ be amplitudes such that,

$$T(|00\rangle_{xy}|-\rangle) = a_{00}|00\rangle_{xy}|-\rangle$$
$$T(|01\rangle_{xy}|-\rangle) = a_{01}|01\rangle_{xy}|-\rangle$$
$$T(|10\rangle_{xy}|-\rangle) = a_{10}|10\rangle_{xy}|-\rangle$$
$$T(|11\rangle_{xy}|-\rangle) = a_{11}|11\rangle_{xy}|-\rangle$$

Write down the values of $a_{00}, a_{01}, a_{10}, a_{11}$.