

Assignment - 1

01) State at A:

State at B:

02) Joint state $|\Psi\rangle$ at A:

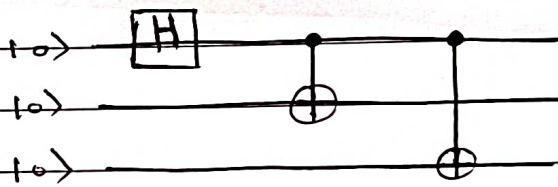
$$\frac{1}{\sqrt{2}} \left[\alpha (|1010\rangle + |1001\rangle) + \beta (|1110\rangle + |1101\rangle) \right]$$

Joint state $|\Psi\rangle$ at B:

$$\frac{1}{\sqrt{2}} \left[\alpha (|1010\rangle + |1001\rangle) + \beta (|1100\rangle - |1111\rangle) \right]$$

03)

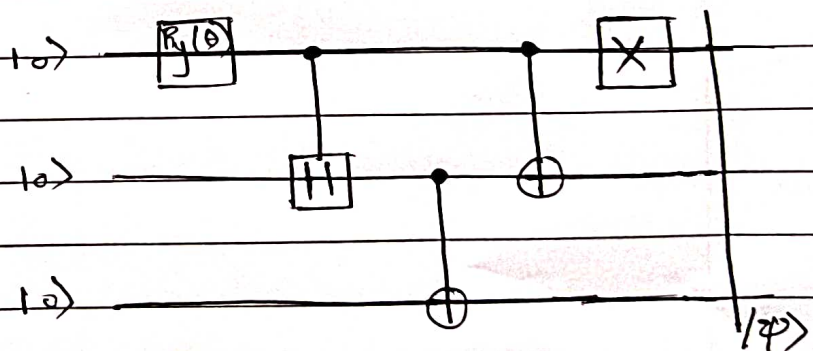
GHZ State:



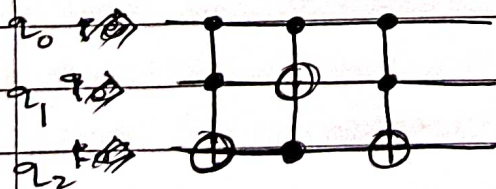
W State:

• where $\theta = 1.321$

$$|\Psi\rangle = \frac{1}{\sqrt{3}} \left[|110\rangle + |010\rangle + |100\rangle \right]$$



04)



Input

Output

q_0

q_1

q_2

$|1000\rangle$

$|1000\rangle$

$|1100\rangle$

$|1100\rangle$

$|1010\rangle$

$|1010\rangle$

$|1001\rangle$

$|1001\rangle$

$|1110\rangle$

$|1110\rangle$

$|1111\rangle$

$|1111\rangle$

$|1011\rangle$

$|1011\rangle$

$|1011\rangle$

$|1011\rangle$