

06

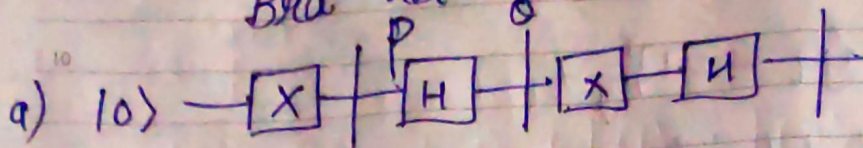
SEPTEMBER
WEDNESDAY

PSET-4

2017

WK 36 • 247

Q1. write down quantum states in Bra-ket notation

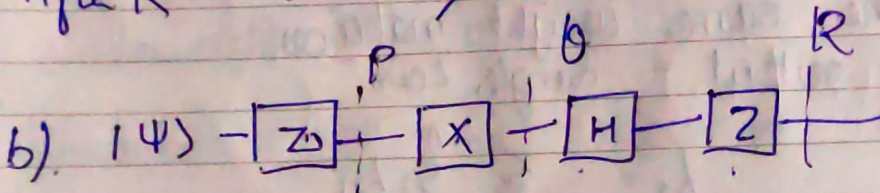


initial state $\rightarrow 10\rangle$

After P $\rightarrow 11\rangle$

After Q $\rightarrow \frac{1}{\sqrt{2}} (10\rangle - 11\rangle)$

After R $\rightarrow -11\rangle$



$1\psi\rangle = \alpha 10\rangle + \beta 11\rangle$

After P $\rightarrow \alpha 10\rangle - \beta 11\rangle$

After Q $\rightarrow \alpha 11\rangle - \beta 10\rangle$

After R $\rightarrow \alpha 1+\rangle - \beta 1-\rangle$

2017 SEPTEMBER

Notes

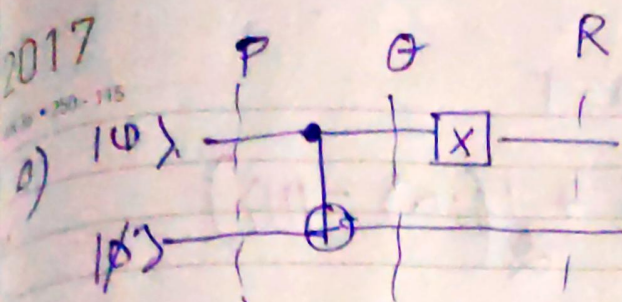
Mon	4	11	18	25	
Tue	5	12	19	26	
Wed	6	13	20	27	
Thu	7	14	21	28	
Fri	1	8	15	22	29
Sat	2	9	16	23	30
Sun	3	10	17	24	

2017

250-115

SEPTEMBER
THURSDAY

07



$$|\psi\rangle = \alpha|0\rangle + \beta|1\rangle$$

$$|\phi\rangle = \gamma|0\rangle + \delta|1\rangle$$

initial state

$$(\alpha|0\rangle + \beta|1\rangle)(\gamma|0\rangle + \delta|1\rangle)$$

Aft P

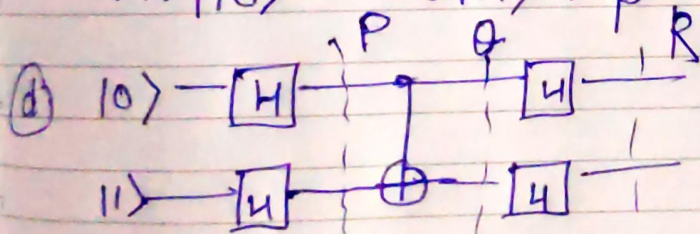
$$\alpha\gamma|00\rangle + \alpha\delta|01\rangle + \beta\gamma|10\rangle + \beta\delta|11\rangle$$

Aft Q CNOT

$$\alpha\gamma|00\rangle + \alpha\delta|01\rangle + \beta\gamma|11\rangle + \beta\delta|10\rangle$$

Aft R

$$\alpha\gamma|10\rangle + \alpha\delta|11\rangle + \beta\gamma|01\rangle + \beta\delta|00\rangle$$



Initial state

$$\frac{1}{\sqrt{2}}(|0\rangle + |1\rangle) \frac{1}{\sqrt{2}}(|0\rangle - |1\rangle)$$

$$\frac{1}{2}|0\rangle(|0\rangle - |1\rangle) + \frac{1}{2}|1\rangle(|0\rangle - |1\rangle)$$

2017 OCTOBER

Mon	30	2	9	16	23
Tue	31	3	10	17	24
Wed		4	11	18	25
Thu		5	12	19	26
Fri		6	13	20	27
Sat		7	14	21	28
Sun	1	8	15	22	29

08

SEPTEMBER
FRIDAY

Aft B - CNOT

we had

$$\frac{1}{2}(|00\rangle - |01\rangle) + \frac{1}{2}(|10\rangle - |11\rangle)$$

CNOT

$$\frac{1}{2} [|00\rangle - |01\rangle + |11\rangle - |10\rangle]$$

Aft R.

$$\frac{1}{2} [\cancel{|110\rangle} + \cancel{|110\rangle}]$$

$$\boxed{|111\rangle}$$

2017 SEPTEMBER

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
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Notes