Quiz - DFT, QFT

Due Jun 17 at 11:59pm Points 10 Questions 5

Available until Jun 17 at 11:59pm Time Limit None

Allowed Attempts Unlimited

Take the Quiz Again

Attempt History

	Attempt	Time	Score
KEPT	Attempt 4	less than 1 minute	10 out of 10
LATEST	Attempt 4	less than 1 minute	10 out of 10
	Attempt 3	5 minutes	7.33 out of 10
	Attempt 2	1,606 minutes	6 out of 10
	Attempt 1	23 minutes	3.33 out of 10

(!) Correct answers are hidden.

Score for this attempt: 10 out of 10

Submitted Jun 11 at 2:10pm

This attempt took less than 1 minute.

Question 1	2 / 2 pts			
[D01-01] Use pen and paper to compute DFT of ${3 \choose 4}$.				
$\bigcirc \left(\frac{\frac{3}{\sqrt{2}}}{\frac{4}{\sqrt{2}}} \right)$				
$\bigcirc \left(\begin{array}{c} \frac{1}{\sqrt{2}} \\ -\frac{1}{\sqrt{2}} \end{array}\right)$				
$\bigcirc \left(\begin{array}{c} \frac{3}{\sqrt{2}} \\ -\frac{4}{\sqrt{2}} \end{array}\right)$				

Question 2

2 / 2 pts

[D02-01] What is the QFT of the state $|01\rangle$?

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

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

$$igcirc$$
 $rac{1}{2}ig(i|00
angle-|01
angle+i|10
angle-|11
angleig)$

$$igotimes rac{1}{2}ig(|00
angle + i|01
angle - |10
angle - i|11
angleig)$$

Question 3

2 / 2 pts

[D02-04] What happens if we apply the operation CR₂ to the quantum state $\frac{|01\rangle+|11\rangle}{\sqrt{2}}$?



$$\bigcirc \quad rac{|01
angle{+}e^{rac{\pi i}{2}}}{\sqrt{2}}\ket{11}$$

$$\bigcirc \quad \frac{|01\rangle + e^{2\pi}|11\rangle}{\sqrt{2}}$$

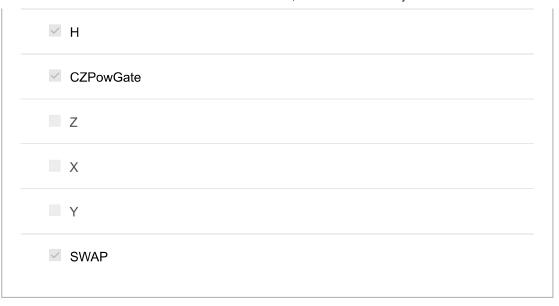
$$\bigcirc \quad \frac{e^{\frac{\pi i}{2}} \mid \! 01 \rangle \! + \! e^{\frac{\pi i}{2}} \mid \! 11 \rangle}{\sqrt{2}}$$

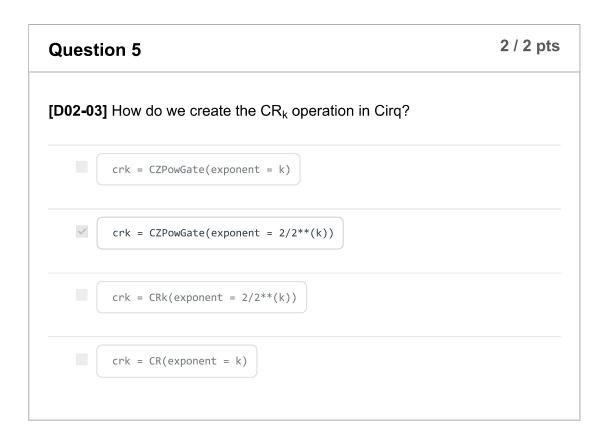
$$\bigcirc \ \ rac{e^{\pi i 2^{-1}}}{\sqrt{2}} \ket{11}$$

Question 4

2 / 2 pts

[D02-02] Select the gates which are used in the QFT circuit.





Quiz Score: 10 out of 10