

Homework Quiz - Week 12 Results for Murshed SK

❗ Correct answers are hidden.

Score for this attempt: 10 out of 10

Submitted Jan 25 at 2:58pm

This attempt took 16 minutes.



Question 1

1 / 1 pts

What is the likelihood of measuring each state in in Problem #1.1?

- ☐ 100% chance 1, 0% chance 0
- ☐ 0% chance 1, 100% chance 0
- ☒ 50% chance 1, 50% chance 0
- ☐ 71% chance 1, 71% chance 0
- ☐ 71 % chance 1, 29% chance 0



Question 2

1 / 1 pts

Which qubits in Problem #1.2 are entangled?

- ☐ q0 with q1
- ☐ q0 with q1 and q2 with q3
- ☐ q0 with q3
- ☒ All of the qubits are entangled
- ☐ None of the qubits are entangled



Question 3

1 / 1 pts

In Problem #1.3, which of these is not a valid final state for the qubits?

- ☐ $|1010\rangle$
- ☒ $|1100\rangle$
- ☐ $|1011\rangle$
- ☐ $|1110\rangle$
- ☐ $|1111\rangle$



Question 4

1 / 1 pts

In Problem #2.1, what best describes the entanglement between the second and third qubit?

- ☐ They are entangled such that they are always in the same state.
- ☒ They are entangled such that they are always in opposite states.
- ☐ The nature of their entanglement depends on the state of the first qubit.
- ☐ The two qubits are not entangled.
- ☐ The two qubits are entangled in such that they are in opposite phases



Question 5

1 / 1 pts

In Problem #2.2, what is the likelihood of measuring the $|001\rangle$ state?

- ☐ 100%
- ☐ 0%
- ☒ 50%
- ☐ 33%
- ☐ 25%



Question 6

1 / 1 pts

In Problem #2.2, what is the likelihood of measuring the $|100\rangle$ state?

- ☐ 100%
- ☒ 0%
- ☐ 50%
- ☐ 33%
- ☐ 25%



Question 7

1 / 1 pts

In Problem #2.2, what describes the entanglement between the three qubits?

- ☐ The first and second qubits are entangled to be in the same state, the third qubit is not entangled.
- ☐ The first and third qubits are entangled to be in opposite states, the second qubit is not entangled.
- ☒ The first and second qubits are entangled to be in the same state and the opposite state of the third qubit.

- ☐ The first and third qubits are entangled to be in the same state and the same state of the second qubit.
- ☐ The qubits are not entangled.



Question 8

1 / 1 pts

In Problem #2.3, which state is the most likely to be measured?

- ☐ 0000
- ☐ 0100 and 1011
- ☐ 0110
- ☐ 0111
- ☒ All states are equally likely to be measured.



Question 9

1 / 1 pts

In Problem #2.4, **before modifying the circuit**, what was the likelihood of measuring the $|000\rangle$ state?

- ☐ 35%
- ☐ 50%
- ☐ 100%
- ☒ 12.5%
- ☐ 5%



Question 10

1 / 1 pts

In Problem #2.4, **after modifying the circuit**, what was the likelihood of measuring the $|000\rangle$ state?

- ☒ 25%
- ☐ 50%
- ☐ 100%
- ☐ 12.5%
- ☐ 5%

Quiz Score: 10 out of 10