

Name _____

The Marvelous World of Qubits: Quantum Computing's Building Blocks

Multiple Choice Questions

1. What sets qubits apart from classical bits in computing?
 - a) Qubits are larger in size.
 - b) Qubits can only be 0 or 1.
 - c) Qubits can exist in multiple states simultaneously due to quantum superposition.
 - d) Qubits are faster than classical bits.

2. What is quantum superposition, and how does it relate to qubits?
 - a) It is a type of quantum gate.
 - b) It allows qubits to be both 0 and 1 at the same time.
 - c) It is a measurement of qubits.
 - d) It is a method of cooling qubits.

3. What is the significance of entanglement in quantum computing?
 - a) It helps qubits communicate with classical computers.
 - b) It allows qubits to exist in a single state.
 - c) It enables instant influence between entangled qubits, regardless of distance.
 - d) It makes quantum gates more powerful.

4. What is the role of quantum gates in quantum computing?
 - a) They manipulate classical bits.
 - b) They perform logic operations on qubits.
 - c) They measure qubits.
 - d) They serve as power sources for quantum computers.

5. How do qubits eventually produce useful results in quantum computing?
 - a) They remain in superposition indefinitely.
 - b) They are entangled with classical bits.
 - c) They undergo quantum measurement, collapsing into one of their possible states.
 - d) They are measured before any calculations are performed.

