

Name _____

Quantum Computing's Ethical and Societal Impact

Short Answer Key

1. Quantum superposition is a property that allows qubits in a quantum computer to exist in multiple states simultaneously. In quantum computing, this property enables qubits to perform multiple calculations at once, leading to faster problem-solving.
2. Potential benefits of quantum computing for scientific research and society include accelerated scientific discoveries in fields like chemistry and medicine, advancements in AI and machine learning, and reduced carbon emissions due to improved energy efficiency.
3. Ethical concern: Privacy concerns related to potential encryption breaches. Societal implication: Advancements in AI and machine learning.
4. Quantum computing can exacerbate the digital divide by increasing the cost and complexity of technology, limiting access to certain groups or countries. Measures to address this issue include efforts to reduce the cost of quantum technology and promote equitable access.
5. Raising public awareness about quantum computing and its implications is important to ensure that individuals and communities can make informed decisions about its development and use. It helps promote responsible research, ethical considerations, and public engagement.

