

Quantum Cryptography and Advanced Topics (Unit 3)

UNIT

Abhishek Parakh - October 21, 2018

Apply and Analyze

Students will be able to relate classical and quantum cryptography.

Evaluate and Synthesize

Students will be able to discuss the three-stage quantum key distribution protocol.

Apply and Analyze

Students will be able to experiment with IBM quantum computer and simulator for different quantum key distribution schemes.

Evaluate and Synthesize

Students will be able to discuss BB84 and B92 protocols.

Apply and Analyze

Students will be able to analyze quantum key distribution protocol for detecting eavesdropping.

Apply and Analyze

Students will be able to make use of the IBM quantum computer to simulate quantum teleportation.

Evaluate and Synthesize

Students will be able to discuss entanglement based quantum key distribution protocol.

Apply and Analyze

Students will be able to identify the significance of non-orthogonal bases in the quantum key distribution protocol.

Evaluate and Synthesize

Students will be able to discuss Goldenberg-Vaidman quantum key distribution protocol.

Apply and Analyze

Students will be able to list attacks on quantum key distribution implementations.

Remember and Understand

Students will be able to recall no cloning theorem of quantum mechanics.

Apply and Analyze

Students will be able to develop quantum key distribution protocols using the principles of superposition and no-cloning theorem.