

NPTEL Video Lecture Topic List - Created by LinuXpert Systems, Chennai

NPTEL Video Course - Chemistry and Biochemistry - NOC:Quantum Computing

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Co-ordinating Institute - IIT - Kanpur

Sub-Titles - Available / Unavailable | MP3 Audio Lectures - Available / Unavailable

- Lecture 1 - Introduction - Motivation and Overview
- Lecture 2 - Introduction - Technical Details
- Lecture 3 - Introduction - Basic tools
- Lecture 4 - Computational Tools
- Lecture 5 - Quantum Measurement and Teleportation
- Lecture 6 - Quantum Teleportation and Cryptography
- Lecture 7 - DJ Algorithm and Implementation Aspects
- Lecture 8 - Grover's Algorithm
- Lecture 9 - Basics of Shor's Algorithm
- Lecture 10 - Shor's Algorithm and Quantum Fourier Transform (QFT)
- Lecture 11 - Basics of Quantum Mechanics
- Lecture 12 - Modern look at Quantum Mechanics
- Lecture 13 - Basics of NMR
- Lecture 14 - Concepts in NMR Quantum Computing
- Lecture 15 - Laser Basics
- Lecture 16 - Continuous Wave Lasers
- Lecture 17 - Pulsed Lasers
- Lecture 18
- Lecture 19
- Lecture 20
- Lecture 21 - Optical Implementation
- Lecture 22 - Solutions to problem set - 1
- Lecture 23 - Basics of Ion Traps
- Lecture 24 - Applications of Ion Traps in QIQC
- Lecture 25 - Reviewing Concepts and clarifying problems - 1
- Lecture 26 - Reviewing Concepts and clarifying problems - 2
- Lecture 27 - Qubits used in Commercial Quantum Computing
- Lecture 28 - Spintronics Quantum Computing
- Lecture 29 - Back to Basics - I

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- Lecture 30 - Back to Basics - II
- Lecture 31 - Understanding Implementation Issues from the Basics - I
- Lecture 32 - Understanding Implementation Issues from the Basics - II
- Lecture 33 - Implementation with Solid-State Super conducting Qubits
- Lecture 34 - Concept of Density Matrix for Quantum Computing
- Lecture 35 - Understanding the ensemble of Qubits from Density Matrix
- Lecture 36 - Understanding Quantum Measurement, Entanglement etc. in Quantum Computing using Density Matrix
- Lecture 37 - Principles
- Lecture 38 - Measurements
- Lecture 39 - Working of Quantum Computers
- Lecture 40 - Academic Development in Quantum Computing - I
- Lecture 41 - Academic Development in Quantum Computing - II
- Lecture 42 - Commercial Development in Quantum Computing Implementation
- Lecture 43 - Use of Atomic Qubits in Quantum Computing
- Lecture 44 - Futuristic Aspects in Implementing Quantum Computing - I
- Lecture 45 - Futuristic Aspects in Implementing Quantum Computing - II