

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

NPTEL Video Course - Chemistry and Biochemistry - NOC:Quantum Mechanics and Molecular Spectroscopy

Subject Co-ordinator - Prof. Naresh Patwari

Co-ordinating Institute - IIT - Bombay

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

- Lecture 1 - Introduction to quantum Mechanics - Part 1
- Lecture 2 - Introduction to quantum Mechanics - Part 2
- Lecture 3 - Introduction to quantum Mechanics - Part 3
- Lecture 4 - Time Dependant Perturbation Theory of Two states - Part 1
- Lecture 5 - Time Dependent Perturbation Theory of Two States - Part 2
- Lecture 6 - Time Dependent Perturbation Theory of Two States - Part 3
- Lecture 7 - Time Dependent Perturbation Theory of Many States - Part 1
- Lecture 8 - Time Dependent Perturbation Theory of Many States - Part 2
- Lecture 9 - First-Order Correction to Time- Dependent Perturbation Theory
- Lecture 10 - Properties of Light (Classical Treatment)
- Lecture 11 - Interaction Hamiltonian - Part 1
- Lecture 12 - Interaction Hamiltonian - Part 2
- Lecture 13 - Interaction Hamiltonian - Part 3
- Lecture 14 - Transition Moment Integral
- Lecture 15 - Absorption Probability - Part 1
- Lecture 16 - Absorption Probability - Part 2
- Lecture 17 - Transition to Continuum States
- Lecture 18 - Einstein's Coefficient - Part 1
- Lecture 19 - Einstein's Coefficient - Part 2
- Lecture 20 - Einstein's Coefficient - Part 3
- Lecture 21 - Spontaneous Emission Lifetime
- Lecture 22 - Relationship between Transition Dipole and Extinction Coefficient
- Lecture 23 - Spectral Lineshapes
- Lecture 24 - Selection Rules
- Lecture 25 - Molecular Rotations - Part 1
- Lecture 26 - Molecular Rotations - Part 2
- Lecture 27 - Molecular Rotations - Part 3
- Lecture 28 - Rotational Selection Rules
- Lecture 29 - Rotational Spectrum

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- Lecture 30 - Molecular Vibrations - Part 1
- Lecture 31 - Molecular Vibrations - Part 2
- Lecture 32 - Vibrational Selection rules
- Lecture 33 - Electronic Transition
- Lecture 34 - Rotations of Polyatomic Molecules - Part 1
- Lecture 35 - Rotations of Polyatomic Molecules - Part 2
- Lecture 36 - Selection Rules for particle in a box
- Lecture 37 - Interpretation of Rotational Spectra
- Lecture 38 - Features of vibrational and electronic spectroscopy