

Smt Sindhutai Jadhao Arts and Science Mahavidyalaya, Mehkar
B.Sc.III SEMESTAR V
PHYSICS

Topic	Link for Material
Unit I : Origin of Quantum Mechanics	
Historical Background: Failure of classical wave theory in explaining	https://www.youtube.com/watch?v=fF4iMpmyo9c
Black body radiation and Photoelectric Effect	https://www.youtube.com/watch?v=Mxj3bNN4nCA
Compton Effect Qualitative explanation	https://www.youtube.com/watch?v=3Jz0wGKgtAM
Assumptions of Planck's Quantum Theory	https://www.youtube.com/watch?v=ymGdrb-pCaI
Wave Particle Duality	https://www.youtube.com/watch?v=Q2OlsMblugo
Matter Waves: De Broglie Hypothesis,	https://www.youtube.com/watch?v=B-Ngv7bfqoI
Davisson	
Germer experiment	https://www.youtube.com/watch?v=f2gxxcUMjRQ
Concept of Wave Packet,	https://www.youtube.com/watch?v=aoSHBRO54JU
Phase velocity,	https://www.youtube.com/watch?v=EIqKG5TiSYs
group velocity and relation between them.	https://www.youtube.com/watch?v=7RqTHbGdbvs
Heisenberg's uncertainty principle	https://www.youtube.com/watch?v=M3Gp7FZ03Vs
Different forms of uncertainty principle;	https://www.youtube.com/watch?v=sAPWxU-v3-s
single slit diffraction and Gamma ray microscope	https://www.youtube.com/watch?v=sajmqbEtpSU
Unit II : The Schrodinger equation and its applications	
Wave function and its physical significance	https://www.youtube.com/watch?v=PLMOSVZH3SE
Schrodinger time dependent equation	https://www.youtube.com/watch?v=zVisn9iZtA0
Operators in quantum Mechanics	https://www.youtube.com/watch?v=q9Ebge_pciw
Eigen functions and Eigen values	https://www.youtube.com/watch?v=FVMjW-9upjw
Particle in one dimensional and three dimensional box (Energy eigen values)	https://www.youtube.com/watch?v=n_5pkM3P9ZI
Qualitative analysis of potential barrier Tunneling effect)	https://www.youtube.com/watch?v=W_tIoy6dqfk
Simple Harmonic Oscillator	https://www.youtube.com/watch?v=FeqHScAGQU0
Unit III : Atomic and Molecular Spectroscopy	
Quantum Numbers	https://www.youtube.com/watch?v=fOTAD7DmbzY
Stern Gerlach experiment	https://www.youtube.com/watch?v=uH9BAoCnUNw
selection rules	https://www.youtube.com/watch?v=jUBhJhwsavY
l-s and j-j coupling	https://www.youtube.com/watch?v=eRXDgJn-ZMc
Types of spectra – Emission & absorption spectra	https://www.youtube.com/watch?v=SfntkAdYkw8
Continuous X-ray spectrum	https://www.youtube.com/watch?v=Eeex1VUmvCE
Duane and Hunt's law	https://www.youtube.com/watch?v=PJ-fzzQDyvA
characteristic X-ray spectra	https://www.youtube.com/watch?v=8UvIFH1paMs
Mosley's law	https://www.youtube.com/watch?v=ioU5-Cv9WQQ
Raman Effect: stoke's and anti-stoke's lines,	https://www.youtube.com/watch?v=B7izso9WuA4

Quantum theory of Raman effect	https://www.youtube.com/watch?v=xM7jozP9JDw
Experimental arrangement for Raman Spectroscopy	https://www.youtube.com/watch?v=FO_PxXn76g0
Unit IV : Nuclear Physics	
Detection of charged particles; G. M. counter	https://www.youtube.com/watch?v=avvXftiyBEs https://www.youtube.com/watch?v=t4nilIfK2Pg
Binding energy and Mass defect	https://www.youtube.com/watch?v=50lnFUhgI5A
stability of nuclei	https://www.youtube.com/watch?v=qg91CvFVSWg
Alpha Decay	https://www.youtube.com/watch?v=gwl2lnl9ujc
Range of Alpha particles	https://www.youtube.com/watch?v=D_IXphrEZt8
Geiger - Nuttal law and Gamow's explanation of alpha decay	https://www.youtube.com/watch?v=suj5MTLGAUU
Beta decay	https://www.youtube.com/watch?v=avKic7oiwvA
Types and Pauli's Neutrino Hypothesis	https://www.youtube.com/watch?v=5PF1UjpSHcY
Nuclear Fission, Nuclear fusion	https://www.youtube.com/watch?v=6axVVhi62ac
Nuclear reactors	https://www.youtube.com/watch?v=hnWRaGr94sQ
Unit V : Hybrid parameters	
low frequency equivalent of CE amplifier & its analysis	https://www.youtube.com/watch?v=L6BZEJ4wH4I
Bias stability & thermal runaway	https://www.youtube.com/watch?v=JR4DrplI8vk
General principles of amplifier classification, RC coupled amplifier	https://www.youtube.com/watch?v=GpUCK6kMS-A https://www.youtube.com/watch?v=nbruU3BZlV0
equivalent circuits & gain at low	https://www.youtube.com/watch?v=qcHF6lZKaGI
Noise & distortion in electronic circuits	https://www.youtube.com/watch?v=A8WiCZlN1uE
Unit VI : Feedback in amplifiers	
Feedback in amplifiers	https://www.youtube.com/watch?v=4HdsZ1yz_vY
negative feedback	https://www.youtube.com/watch?v=hU8zx0RGJGQ
advantages of negative feedback,	https://www.youtube.com/watch?v=jhWKeyiAd8Q
positive feedback	https://www.youtube.com/watch?v=0nXEUKfBd8A
phase shift oscillator	https://www.youtube.com/watch?v=Gvb4GIV5ig8
Wein bridge,	https://www.youtube.com/watch?v=gbUXbaxvX94
Hartley & Colpits Oscillators	https://www.youtube.com/watch?v=3brZnTnR2OQ
Multi-vibrators – astable, monostable & bistable	https://www.youtube.com/watch?v=MZ2Bnxk5Tac