

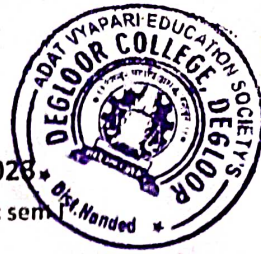
DEGLOOR COLLEGE, DEGLOOR

DEPT. OF PHYSICS

ANNUAL TEACHING PLAN

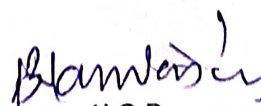
YEAR: 2022-2023

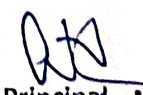
CLASS: M.Sc sem I



NAME OF TEACHER: Dr. Banudas S. Nadwade
 SEMESTER : I
 PAPER NAME & NO.:

TOPIC / SUB TOPIC	PLANNING		EXECUTION		EMARK		
	Expe. Perlo ds	Expected Duration		Actl. Period s		tual Durati	
		From	To			From	To
Module-I: Atomic structure and atomic spectra Spectra of Monovalent atoms Atomic spectra of Hydrogen Spectra of Monovalent atoms Coupling scheme Spectra of Divalent atoms Lande g factor, Interaction energies's Paschen Back effect	15	5/8/2022	25/9/2022	13 5/9	10/10		
Module-II: Microwave Spectroscopy of Molecules Preliminaries, Types of molecules Rigid rotator and Non-rigid rotator, energy levels, selection rules and resulting spectra, the effect of isotopic substitution	15	25/9/22	23/10/22	12	19/10 23/10		
Module-III: Infrared and Electronic spectroscopy of molecules Vibrational spectroscopy of diatomic molecules Vibrational energy of diatomic molecule, Energies, selection rules Energies, selection rules The diatomic vibrating rotator	15	30/10/22	2/12/2022	13	30/10/22		
Module-IV: Raman spectroscopy of molecules Introduction, quantum theory of Raman Effect molecular polarizability, Pure rotational Raman spectra linear diatomic molecules intensity alteration in Raman spectra of diatomic molecule Vibrational Raman spectra Raman activity of vibrations), rule of mutual exclusion	15	5/12/2022	30/1/23	12	21/12 30/12		


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NAME OF TEACHER: Ishrat Begum Shaikh Gous
 SEMESTER : Annual pattern
 PAPER NAME & NO.: Quantum Mechanics

TOPIC / SUB TOPIC	PLANNING		
	Expe. Periods	Expected Duration	
		From	To
Module I Basic of Quantum Mechanics			
Derivation of time dependent and independent schrodinger equation,	15	2/8/2022	5/10/2022
Physical Significance of wave function			
Quantum Numbers,			
commutation relation for position and momentum operator			
Dirac delta function			
Module II- Angular momentum			
Angular momentum and rotation	15	10/10/2022	11/11/2022
Commutation relation for orbital, spin and total A.M			
Rotation symmetry			
Ladder operator, eigen values of the angular momentum operator			
Reflection invariance and parity			
Module-III: Approximation methods			
(a) Time independent Perturbation Theory	15	15/11/22	29/12/22
Stationary perturbation theory,			
First order correction to energy, , First order correction to wave function,			
(a) Time dependent perturbation Theory			
Module-IV: Collision in 3-d and Scattering (15)	15	30/12/22	2/2/2023
Laboratory and Centre of Mass reference frames,			
differential scattering cross section			
total scattering cross section, Asymptotic form			
of scattering states, Relation between angles			
Total quantum numbers,			
Orbital quantum numbers, magnetic quantum numbers, spin quantum numbers			
Slater's determinant,			

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