

(Lesson Plan)

MCM DAV College for Women, Sector – 36A, Chandigarh
Monthly Teaching Plans (Odd Semester)
Session – (2021-2022)

Name of the Teacher: Dr. Rishu

Department: P.G. Department of Chemistry

Class: B.Sc III Non-Medical Subject: Physical Chemistry Section (s) A&B

S.No.	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	To		
1	11.08.2021	30.08.2021	Elementary Quantum Mechanics-I: Black-body radiation, Planck's radiation law, photoelectric effect, heat capacity of solids, Bohr's model of hydrogen atom (no derivation) and its defects, Compton effect. De Broglie hypothesis, the Heisenberg's uncertainty principle, Sinusoidal wave equation, Hamiltonian operator, Schrodinger wave equation and its importance.	Lecture Method and Group Discussion
2	31.08.2021	29.09.2021	Physical interpretation of the wave function, postulates of quantum mechanics, particle in a one-dimensional box. Schrodinger wave equation for H-atom, separation into three equations (without derivation), quantum numbers and their importance, hydrogen like wave functions, radial wave functions, angular wave functions.	Lecture Method and Group Discussion
3	30.09.2021	19.10.2021	Elementary Quantum Mechanics-II: Molecular orbital theory, basic ideas – criteria for forming M.O. from A.O., construction of M.O.'s by LCAO-H ²⁺ ion. Calculation of energy levels from wave functions, physical picture of bonding and antibonding wave functions, concept of σ , σ^* , π , π^* orbitals and their characteristics. Hybrid orbitals – sp, sp ² , sp ³ ; calculation of coefficients of	Lecture Method and Group Discussion

			A.O.'s used in these hybrid orbitals. Introduction to valence bond model of H ₂ , comparison of M.O. and V.B. models.	
4	20.10.2021	1.11.2021	Photochemistry-I: Interaction of radiation with matter, difference between thermal and photochemical processes. Laws of Photochemistry: Grothus – Drapper law, Stark – Einstein law, Jablonski diagram depicting various processes occurring in the excited state.	Lecture Method and Group Discussion
5	2.11.2021	20.11.2021	Photochemistry-II: Qualitative description of fluorescence, phosphorescence, non-radiative processes (internal conversion, intersystem crossing), quantum yield,	Lecture Method and Group Discussion
6	21.11.2021	4.12.2021	Photosensitized reactions – energy transfer processes (simple examples) Photochemistry of carbonyl compounds and alkenes Revision and Solution of previous years' question papers	Lecture Method and Group Discussion
Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans				
7 th September, 2021	The teachers have completed the scheduled chapters and topics as shown in the lesson plan			
Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans				
5 th October, 2021	The teachers have completed the scheduled chapters and topics as shown in the lesson plan			
Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans				
3 rd November, 2021	The teachers have completed the scheduled chapters and topics as shown in the lesson plan			
Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans				
23 rd November, 2021	The teachers have completed the scheduled chapters and topics as shown in the lesson plan			
Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans				
4 th December, 2021	The teachers have completed the scheduled chapters and topics as shown in the lesson plan			

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***Any of these** – (i) Lecture Method; (ii) PPT; (iii) Online Sources; (iv) Group Discussion; (v) Case Studies etc.
Other Methods adopted by the teacher – Please write the specific teaching method

Sample Format (Lesson Plan)

MCM DAV College for Women, Sector – 36A, Chandigarh
Monthly Teaching Plans (Even Semester)
Session – (2021-2022)

Name of the Teacher: Dr. Yesbinder Kaur

Department : P.G. Department of Chemistry

Class: B.Sc III Non-Medical **Subject:** Physical Chemistry **Section (s)** A&B

S.No.	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	To		
1	3 -02- 2022	23 -02-2022	Spectroscopy : Introduction : Electromagnetic radiation, regions of the spectrum, basic features of different spectrometers, statement of the Born-Oppenheimer approximation, degrees of freedom.	Lecture, group discussion
2	24.02.2022	15.03.2022	Rotational Spectrum: Diatomic molecules. Energy levels of a rigid rotor (semi – classical principles), selection rules, spectral intensity, determination of bond length, qualitative description of non-rigid rotor, isotope effect.	Lecture, group discussion
3	16.03.2022	17.03.2022	Solid State-I: Definition of space lattice, unit cell and Miller Indices Laws of Crystallography – (i) Law of Constancy of Interfacial Angles, (ii) Law of Rationality of Indices, (iii) Law of Symmetry. Symmetry elements in crystals.	Lecture, group discussion
4	18.04.2022	9.05.2022	Solid State-II: X-ray diffraction by crystals. Derivation of Bragg equation. Determination of crystal structure of NaCl, KCl and CsCl (Laue’s method and powder method). Applications of	Lecture, group discussion

			Powder diffraction for structure determination, Thermal and photochemical reaction in solid state	
Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans				
5 th March, 2022	The teachers have completed the scheduled chapters and topics as shown in the lesson plan			
Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans				
4 rd April, 2022	The teachers have completed the scheduled chapters and topics as shown in the lesson plan			
Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans				
7 th May, 2022	The teachers have completed the scheduled chapters and topics as shown in the lesson plan			
Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans				
15 th May, 2022	The teachers have completed the scheduled chapters and topics as shown in the lesson plan			

*Any of these – (i) Lecture Method; (ii) PPT; (iii) Online Sources; (iv) Group Discussion; (v) Case Studies etc.
Other Methods adopted by the teacher – Please write the specific teaching method