

## Lesson Plan

MCM DAV College for Women, Sector – 36A, Chandigarh  
Monthly Teaching Plans (1<sup>st</sup> Semester)  
Session –2021-22

Name of the Teacher: Dr. Aashima Sharma

Department: Chemistry

Class: B.Sc (1<sup>st</sup> Semester) Subject: Inorganic Chemistry

S.No.	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	To		
1.	1-09-2021	11-09-2021	Idea of de Broglie matter waves, Heisenberg uncertainty principle, atomic orbitals	Lecture
2.	13-09-2021	24-09-2021	Schrodinger wave equation, significance of $\Psi$ and $\Psi^2$ , quantum numbers, radial and angular wave functions and probability distribution curves	Lecture and group discussion
3.	25-10-2021	4-10-2021	Shapes of s, p, d orbitals, Aufbau and Pauli exclusion principle, Hund's multiplicity rule, Electronic configuration of elements and ions	Lecture
4.	5-10-2021	13-10-2021	Position of elements in the periodic table, Effective nuclear charge and its calculation, Atomic and ionic radii, ionization energy, electron affinity and electronegativity	Lecture and group discussion
5.	14-10-2021	26-10-2021	Methods of determination of electronegativity, trends in periodic table and application in predicting	Lecture

			and explaining the chemical behavior	
6.	27-10-2021	12-11-2021	Chemical properties of the noble gases, chemistry of xenon, structure and bonding in xenon compounds, Comparative study, diagonal relationships, salient features of hydrides	Lecture
7.	13-11-2021	18-11-2021	Solvation and complexation tendencies including their functions in biosystems, introduction to alkyls and aryls. Covalent Bond-Valence bond theory and its limitations	Lecture
8.	20-11-2021	29-11-2021	Directional characteristics of covalent bond, various types of hybridizations and shapes of simple inorganic molecules and ions. $\text{BeF}_2$ , $\text{BF}_3$ , $\text{CH}_4$ , $\text{PF}_5$ , $\text{SF}_6$ , $\text{IF}_7$ , $\text{SnCl}_2$ , $\text{XeF}_4$ , $\text{BF}_4^-$ , $\text{PF}_6^-$ , $\text{SnCl}_6^{2-}$	Lecture, Group discussion and Seminar
9.	30-11-2021	11-12-2021	VSEPR Theory to $\text{NH}_3$ , $\text{H}_3\text{O}^+$ , $\text{SF}_4$ , $\text{ClF}_3$ , $\text{ICl}_2^-$ and $\text{H}_2\text{O}$ , MO theory, homonuclear elements and ions and heteronuclear ( $\text{BO}$ , $\text{CN}$ , $\text{CO}^+$ , $\text{NO}^+$ , $\text{CO}$ , $\text{CN}^-$ ), diatomic molecules	Lecture, Group discussion and Seminar
10.	13-12-2021	Till exam date	Percentage ionic character from dipole moment and electronegativity difference	Lecture

<b>Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans</b>	
5 <sup>th</sup> Oct, 2021	The teachers have completed the scheduled chapters and topics as shown in the lesson plan

<b>Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans</b>	
9 <sup>rd</sup> Nov, 2021	The teachers have completed the scheduled chapters and topics as shown in the lesson plan
<b>Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans</b>	
7 <sup>th</sup> Dec, 2021	The teachers have completed the scheduled chapters and topics as shown in the lesson plan
<b>Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans</b>	
12 <sup>th</sup> Dec, 2021	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

## Lesson Plan

MCM DAV College for Women, Sector – 36A, Chandigarh  
Monthly Teaching Plans (2<sup>nd</sup> Semester)  
Session –2021-2022

Name of the Teacher: Dr. Aashima Sharma

Department: Chemistry

Class: B.Sc (2<sup>nd</sup> Semester) Subject: Inorganic Chemistry

S.No.	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	To		
1.	3-02-2022	15-02-2022	Ionic Solids – Concept of close packing, Ionic structures, (NaCl type, Zinc blende, Wurtzite, CaF <sub>2</sub> and antiferite)	Lecture, PPT, videos explaining the close packing and structure
Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans 5 <sup>th</sup> April, 2022				
2.	16-02-2022	28-02-2022	Radius ratio rule and coordination number, limitation of radius ratio rule, lattice defects, semiconductors, Lattice energy and Born-Haber cycle, solvation energy and solubility of ionic solids	Lecture, PPT
3.	1-03-2022	15-03-2022	Polarizing power and polarisability of ions, Fajan's rule. Metallic bond-free electron, valence bond and band theories. Weak Interactions – Hydrogen bonding, Vander Waals forces.	Lecture
Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans on 3 <sup>rd</sup> May, 2021				

4.	16-03-2022	31-03-2022	Comparative study (including diagonal relationship) of groups 13-14 elements, compounds like hydrides, oxides, oxyacids and halides of groups 13-14, hydrides of boron-diborane	Lecture
5.	1-04-2022	16-04-2022	Higher boranes, borazine, borohydrides, fullerenes, carbides, fluorocarbons.	Lecture and group discussion
Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans on 7 <sup>th</sup> June, 2021				
6.	18-04-2022	30-04-2022	Comparative study of groups 15-17 elements, Compounds like hydrides, oxides	Lecture
7.	2-05-2022	Till exams	oxyacids and halides of groups 15-17, silicates (structural principle), tetrasulphur tetranitride. Basic properties of halogens, interhalogens and polyhalides	Lecture
Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans on 5 <sup>th</sup> July, 2021				

\*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