

IInd Sem Chemistry

Sr No	Topic	link
Unit I		
1	Polarisation-Definition	https://youtu.be/rd0qSMI9v50
2	polarising power, polarizability	https://youtu.be/-mmMWveVbC0
3	effect of polarization on nature of bond.	https://youtu.be/YPO_JEfiKiE
4	Fajan's rules of polarisation and its applications.	https://youtu.be/R0AAIcfn1s
5	Covalent bonding-Directional nature of covalent bond.	https://youtu.be/CSANrSdlofc
6	Hybridisation,	https://youtu.be/AvhUUY8yD08
7	types of hybridisation to explain geometries of NH ₄ ⁺ ion, PCl ₅ , SF ₆ and IF ₇ .	https://youtu.be/ho3K6k5udQo
8	Theory of solvent systems and Lux-Flood concept of acids and bases	https://youtu.be/2vCWNfMGnfA
9	Hard and soft acids and bases.	https://youtu.be/2jjkfJlb2V4
10	Pearsons HSAB or SHAB principle with important applications.	https://youtu.be/2jjkfJlb2V4
Unit 2		
1	Comparative study of 16th and 17th group elements with reference to electronic configuration, ionization energy and oxidation states.	https://youtu.be/rzqdbWr-qpM
2	Oxidising properties of halogens with reference to oxidation potential.	https://youtu.be/oA1ITnvH2oI
3	Interhalogen compounds, structure and bondings.	https://youtu.be/izn19IAdrHQ
4	Introduction to fluorocarbons	https://youtu.be/Puggwj4mzkA
5	Inertness of noble gases	https://youtu.be/zXdScmMf9w0
6	Compounds of noble gases only structure and bonding in XeF ₂ , XeF ₄ , XeF ₆ , XeO ₃ and XeO ₄	https://youtu.be/uoYVd8sJUVw
7	Requirements of a good solvent	https://youtu.be/hjulJvwqrZw

8	Water as an universal solvent.	https://youtu.be/y7lxT7BrO7E
9	Physical properties of solvents namely liquid range, dielectric constant, dipole moment, heat of vaporisation and solubility behaviour.	https://youtu.be/PvsYbVeXI4c
10	Classification of solvents.	https://youtu.be/lvEj2dubGh8
11	Acid base, precipitation, redox, solvolysis and complexation reactions in liquid ammonia.	https://youtu.be/j5huy4J_Jfs
12	Merits and demerits of liquid ammonia as a solvent.	https://youtu.be/7F0L8z-6rhY
unit 3		
1	Synthesis of vinyl chloride from acetylene and allyl chloride from propylene	https://youtu.be/OS1YAp_teZA
2	Reactions of both with aqueous and alcoholic KOH,	https://youtu.be/mbZlNvxRoPg
3	Comparison of reactivity of vinyl and allyl chloride.	https://youtu.be/OsZkl9g9mhl
4	Synthesis chlorobenzene from benzene, phenol and benzene diazonium chloride,	https://youtu.be/N_H_gzxjXAU
5	Synthesis of benzyl chloride from toluene and benzyl alcohol,	https://youtu.be/YWbhugaB-IQ
6	Reactions of both with aqueous KOH, NH ₃ and sodium ethoxide	https://youtu.be/WmDdzeE-Lrk
7	Comparison of reactivity of chlorobenzene and benzyl chloride.	https://youtu.be/AmLu9wqevow
8	Benzyne intermediate mechanism.	https://youtu.be/y8HZ-HKR0lQ
9	Dihydric alcohols	https://youtu.be/ToCdNH5Bdm4
10	Ethylene glycol- Preparation from ethylene, ethylene chloride and ethylene oxide,	https://youtu.be/TEckCdWJfwg
11	Reactions- with Na, PCl ₅ , CH ₃ COOH, ZnCl ₂ , conc. H ₂ SO ₄ and dehydration with heat	https://youtu.be/fixfpRj_D40
12	Trihydric alcohols: Glycerol- Preparation from propylene	https://youtu.be/S97VWGJ4IzU
13	Reactions with Na, HCl, PCl ₅ , HNO ₃ and KHSO ₄ .	https://youtu.be/rudl-p-WVbA

14	Pinacol- pinacolone rearrangement (mechanism).	https://youtu.be/RX8m6hFN_Os
UNIT 4		
1	Phenols: Methods of formations a) from aniline b) from cumene.	https://youtu.be/NT9pK3PYEDg
2	Acidic character	https://youtu.be/4i09ulytpY8
3	Reaction of Phenols- a) Carboxylation (Kolb's reaction), b) Fries Rearrangement, c) Claisen Rearrangement and d) Reimer – Tiemann reaction.	https://youtu.be/3lV7AUXzXeI
4	Diethyl ether- Preparation by Williamson's synthesis and continuous etherification process,	https://youtu.be/edPFvL_AxZQ
5	Reactions-with cold and hot HI.	https://youtu.be/1b-5HgdXFic
6	Synthesis of ethylene oxide from ethylene and styrene oxide from styrene.	https://youtu.be/JkPgFX1TYTY
7	Ring opening reactions of both catalysed by acid and alkali.	https://youtu.be/NRsM8kXtT5s
Unit 5		
1	Polar and non-polar molecules. Dipole moment.	https://youtu.be/PVL24HAesnc
2	Induced polarization and orientation polarization.	https://youtu.be/8bRPaNsrj8s
3	Clausius-Mossotti equation (only qualitative treatment).	https://youtu.be/7toDiP0zg-M
4	Measurement of dipole moment by temperature and refractivity methods.	https://youtu.be/ohuU5Lu8dy0
5	Applications of dipole moment for the determination of molecular structure. i.e. percentage ionic character of covalent bonding, molecular geometry, cis-trans isomers, ortho, meta and para isomers of a disubstituted benzene.	https://youtu.be/4zCtQ7vhca4
6	Paramagnetic and diamagnetic substances, origin of paramagnetism, diamagnetism, ferromagnetism and antiferromagnetism	https://youtu.be/Ocir1XGbcYU
7	Volume, specific, mass and molar susceptibility. Relationship between molar magnetic susceptibility and magnetic moment.	https://youtu.be/zljSLA4gcG4
8	Relationship between magnetic moment and number of unpaired electrons.	https://youtu.be/3fjSZqINlxk
9	Gouy's balance method for determination of magnetic	https://youtu.be/VC1OTpL8qVI

	susceptibility.	
10	Application of magnetic moment in the determination of molecular structure.	
	(vi) Numericals.	https://youtu.be/w7xu8eziiEg
Unit 6		
1	Explanation of terms like rate of reaction, order of a reaction and molecularity. Definition with one example of zero, first and second order reaction. Half life period of a reaction.	https://youtu.be/rGZfrCEC6NM
2	Derivation of rate equation for first and second order reaction with equal initial concentration and different initial concentration of a reactant.	https://youtu.be/DOrRQXBTEeM
3	Characteristics of first and second order reaction. Examples of first and second order reaction and their kinetics study with modified rate equation viz. the reactions (i) decomposition of H ₂ O ₂ , (ii) reaction between K ₂ S ₂ O ₈ and KI, (iii) hydrolysis of methyl acetate catalyzed by acid, (iv) saponification of ethyl acetate by NaOH and (v) inversion of canesugar.	https://youtu.be/f428ANNawwU
4	Determination of order of a reaction by integration, graphical, equifractional change, vant Hoff's differential method and Ostwald's isolation method. Effect of temperature on reaction rates. Arrhenius equation, activation energy and its determination using Arrhenius equation. Numericals.	https://youtu.be/uexnw54Cluk