**RK VIGYAN PG COLLEGE KALWAR JAIPUR, RAJ.**

**B.SC 2ND SEMESTER CHEMISTRY THEORY**

| S.N | PAPER (I, II,) NAME | UNIT | TOPIC | VIDEO LINK |
|---|---|---|---|---|
| 1 | | **UNIT-I** | Introductory concept and mechanism of organic reactions | https://youtu.be/0JRv80wGcFk?si=2G0wSdUiDenVM |
| 2 | | | IUPAC nomenclature of organic compounds | https://youtu.be/0JRv80wGcFk?si=cUiUctzS0gzt7Fxi |
| 3 | | | Dipole moment | https://youtu.be/L7xe0_Q9qsA?si=Rb_8fDyimB6ZTYQY |
| 4 | | | Inductive effect and field effect | https://youtu.be/256RhzJEUv8?si=PRoyfjTOO3X3VgJV |
| 5 | | | Electromeric effect | https://youtu.be/ugA0wVcIl50?si=83e_kP-cKC5xTks5 |
| 6 | | | Conjugation resonances and resonances energy | https://youtu.be/exwZMrFBekE?si=62Q0jfQ2aHevmRf3 |
| 7 | | | Hyperconjugation | https://youtu.be/qG-xO8kKPrs?si=DtkaX2YDDSCx9pXv |
| 8 | | | Homolytic and heteroytic bond cleavage | https://youtu.be/tBa8nIKJShI?si=iGu553JYanmuh4mq |
| 9 | | | Type of reagents electrophiles and nucleophiles | https://youtu.be/R4iTrdVZ-g0?si=0roFMrBBOOwRJJ5M |
| 10 | | | Reactive intermediates-carbocations | https://youtu.be/1512AHYtBtI?si=eUytuHlkZ5kifFLS |
| 11 | | | Carbanion | https://youtu.be/0F-SgMeqjTg?si=tKF9ccGuJaDiHehN |
| 12 | | | Free radicals | https://youtu.be/wdTstLZLZmw?si=5Km3xCqmHt6sg0sc |

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| 13 | | | Carbenes,arynes and nitrenes | https://youtu.be/hTBzyAI_AMU?si=yIZdcA8PlsuP2lUp |
| 14 | | | Type of organic reaction substitution reaction | https://youtu.be/YliJmH_BXvA?si=tYZ7DttzhceiqPKZ |
| 15 | | | Addition reaction | https://youtu.be/vAQ8BPXA3Sk?si=pmMvU9BS8pTGotPw |
| 16 | | | Elimination reaction | https://youtu.be/n8M0-GZ_lKU?si=KSWyecCQ8yHuQ6EC |
| 17 | | | Rearrangement reaction | https://youtu.be/YBjv67LCtlQ?si=_h_9RboyRovBFv2i |
| 18 | | | Markovnikov rule | https://youtu.be/tdVNhCVAd8U?si=-O-IDMmSqp6neN9S |
| 19 | | | Anti-markovnikov rule | https://youtu.be/N_gtQF3jI3M?si=lSHOf27t1QgtKfpV |
| 20 | | | Saytzeffs rule | https://youtu.be/WS2VgJa3tl0?si=aEniWwjYzd-v4A5t |
| 21 | | | Energy considerations | https://youtu.be/cEGgL2fcH8k?si=D85p4iXo25tcEVQt |
| 22 | | | Hofmann elimination | https://youtu.be/qbP_Ehx87oY?si=2UC4jFcitujlh4W9 |
| 23 | | | Method of determination of reaction mechanism | https://youtu.be/YGIvnEUZZRI?si=MhaEgeD3UXjYGlTt |
| 24 | | | Isotope effects | https://youtu.be/mUuj3enT8FQ?si=DcNJ8GsZtiTf2dOr |
| 25 | | **UNIT-II Stereochemistry of organic compound** | Concept of isomerism type of isomerism | https://youtu.be/ATW3eYu6sLY?si=T5ElqRg9omriSIFy |
| 26 | | | Difference between configuration and conformation | https://youtu.be/BRgccTbqqzM?si=x5TGKlKFw4ZCTHPf |
| 27 | | | Flying wedge and fischer projection formula | https://youtu.be/U7KqeZSnKng?si=KKVkmQrsQ1hUCVEh |
| 28 | | **OpticalIsomerism** | Elements of symmetry | https://youtu.be/pfHTUeRnkYg?si=60ZDnQGitqEkDJFa |

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| 29 | | | Molecular chirality | https://youtu.be/MG8j8FdXaN0?si=XbFlULqolZfgmWN9 |
| 30 | | | Stereogenic centre | https://youtu.be/ATDdnSHVSoo?si=ZBT7ixv2QzC5CbJS |
| 31 | | | Optical activity | https://youtu.be/4rbuSRBF0h4?si=59y63dFyRvzxaeXN |
| 32 | | | Enantiomers and properties of enantiomers | https://youtu.be/yA3GSlvLDDU?si=LwCn1j0K5nJ8iltT |
| 33 | | | Chiral and achiral molecule with two stereogenic centre | https://youtu.be/FKjen2gvb9U?si=MpXSRDWOzJgPbxb3 |
| 34 | | | Diastereomers threo and erythro isomers | https://youtu.be/r894msGI4Xc?si=yhtyiw1IxSZ4io-4 |
| 35 | | | Meso compound | https://youtu.be/NTwyBl_yAZw?si=ACPR8tivwT1atk4K |
| 36 | | | Resolution of enantiomers retention and racemization | https://youtu.be/_wuU5eeN0BQ?si=Rge64gBJd34OjvOm |
| 37 | | | Relative and absolute configuration D/L nomenclature | https://youtu.be/7xzpgAhW4aw?si=rObOSH9Gyn26uLCU |
| 38 | | | Sequence rule R/S system of nomenclature | https://youtu.be/JDZj4HxrFsc?si=jMEtJx-H55m058Sv |
| 39 | | **Geometrical isomerism** | Determination of configuration of geometric isomers -cis/trans | https://youtu.be/Pc5tcj_JbPA?si=-pAAO0OEUbM9lx05 |
| 40 | | | E/Z system of nomenclature | https://youtu.be/whySv_rXhgg?si=m23iD72clJdzWbRG |
| 41 | | | Geometrical isomerism in oximes | https://youtu.be/a7dYiU9xXTg?si=mHtXzlbGtHQHFP94 |
| 42 | | | Geometrical isomerism in alicyclic compounds | https://youtu.be/4XxuWJRwWxg?si=7t3SfCAtzVOL_0kC |
| 43 | | **Conformational isomerism** | Newman projection and sawhors formula | https://youtu.be/U7KqeZSnKng?si=DLSdS0row3R2Neox |

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| 44 | | | Conformational analysis of ethane ,n-butane and cyclohexane | https://youtu.be/G0s7bwm3RfA?si=NM7X4x1z6dkybzQL |
| 45 | | **UNIT-III Arenes and aromaticity** | nomenclature of benzene derivatives | https://youtu.be/2t1I76qotRU?si=Tf7eS8qBNq6bB3lw |
| 46 | | | the aryl group aromatic nucleus and side chain | https://youtu.be/-m_SIGid6ZU?si=MqtQ3X2jMwlCz05b |
| 47 | | | Structure of benzene | https://youtu.be/AwmzMkTE450?si=GXiFiaL4HsA_53lv |
| 48 | | | Kekule structure of benzene | https://youtu.be/eXPiHHKLjxA?si=4GMnznCfXJhaVfZ5 |
| 49 | | | Stability and carbon-carbon bond length of benzene | https://youtu.be/5w1Im-zAHLg?si=lT9IBSzh-B8fkyim |
| 50 | | | Resonances structure MO diagram | https://youtu.be/my_onNk2Ku4?si=rSD7xtXYpBEIYoOp |
| 51 | | | Aromaticity huckel rule aromatic ions three to eight membered. | https://youtu.be/kRpohUcGK-Y?si=rj1YDru12aIpNa3p |
| 52 | | | Aromatic electrophilic substitution general pattern of mechanism | https://youtu.be/TcNH6P-jOb4?si=teNVQqnWIXwbSgsA |
| 53 | | | Aromatic electrophilic substitution reaction mechanism of nitration, halogenation, sulphonation, friedel crafts reaction | https://youtu.be/oHLyW186BCg?si=6OXBIHGmVw3sEc8T |
| 54 | | | Chloromethylation of benzene | https://youtu.be/IM_vDnjOoDc?si=4idA5dI0Dx80BmD8 |

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| 55 | | | Energy profile diagram | https://youtu.be/1ZtUJQpGcKs?si=CsQlgaxrRtTDBlK0 |
| 56 | | | activating and deactivating substituents | https://youtu.be/u7NL0JgEmWk?si=Nq-jZCuYb4VvO9jH |
| 57 | | | Direct to influence orientation and ortho/ para ratio | https://youtu.be/hvqcDtZNhtY?si=6r3hIjAEs6QkySP6 |
| 58 | | | Side chain reaction of benzene derivative | https://youtu.be/zFEA7RtoEt0?si=PWnmHk-lSu86K0Rd |
| 59 | | | Birch reduction | https://youtu.be/OZN9nLfD59g?si=ffHxCIYpDf-WG3Qg |
| 60 | | **UNIT-IV Chemical kinetics** | Chemical kinetics and it's scopes | https://youtube.com/playlist?list=PLWi-SYh-VwoDpOpzu2Uw_mk1N-qaOG3nr&si=CU7jotzifucWwrYM |
| 61 | | | Rate of reaction | https://youtu.be/RTT1EMEyCeI?si=EOLlRdnu8w2z2u38 |
| 62 | | | Instantaneous rate of reaction | https://youtu.be/DkxIEC0_vQA?si=e-2xIDNboAP9XBlw |
| 63 | | | Factory influencing the rate of reaction consideration, temperature ,pressure, solvent ,light, catalyst | https://youtu.be/QftC4_NdmL8?si=C7T4w2E2THEkBW6b |
| 64 | | | Characteristics of simple chemical reaction zero order reaction | https://youtu.be/QqoCCi-V-G8?si=LsIPGWoEKCY1VWv5 |
| 65 | | | First order reaction | https://youtu.be/rMY14Yktegw?si=WEj7jiTirP4fPeDB |
| 66 | | | Second order reaction | https://youtu.be/clznNBkgEuw?si=UksFk23qxLP8PZHF |
| 67 | | | Pseudo order reaction | https://youtu.be/_TYDzDssxM4?si=dAFTPWu298-Kyzkw |
| 68 | | | Determination of order of reaction | https://www.youtube.com/live/EIEnXOc1SeY?si=o6Y-RY-eo4NLpbQ_ |

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| 69 | | | Differential method of integration method of half life period and isolation method | https://youtu.be/HfHyi7r5W7U?si=rH_qisIOWufu9Tw- |
| 70 | | | Radioactive decay as a first order reaction | https://youtu.be/bP9TIba_vJ0?si=DqpjV9mGqOtJnN75 |
| 71 | | | Experimental method of chemical kinetics conductometric, potentiomeric, optical method and spectrophotometric method. | https://youtube.com/watch?v=k0NFQ9BLYIM&feature=shared |
| 72 | | | Effect of temperature on rate of reaction | https://youtu.be/fh0PH8h6FhM?si=fszOlNWdB-R-asR7 |
| 73 | | | Arrhenius equation | https://youtu.be/Y1A7LKA60Rw?si=iOBXh5umJTGP1FL6 |
| 74 | | | Concept of activation energy | https://youtu.be/fA0i4n__LQQ?si=l6rqjCW2ZBIrUrey |
| 75 | | | Simple college theory based on heart spare model transition state theory | https://youtu.be/MnHgpLG63WU?si=J1Zy1P3ySvJ01jQT |
| 76 | | | Expression for the rate constant bases on equilibrium constant and thermodynamic aspect | https://youtu.be/DpjU1qsR1Yg?si=XC-B32-y1IgIxcQp |