

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

B.Sc. SEMESTER – I CHEMISTRY

S.N.	Paper & Name	Unit	Topic	Video Link
1.	PAPER – 1 structure-bonding mathematical concept and states of matter	UNIT – 1 Ionic solid, metallic bond, weak interaction	General characteristics of ionic bond	https://youtu.be/ICiuZ6cLQuM?si=pbb3Fc7y9IkXmQBo
2.			Ionic structure	https://youtu.be/gYPJNfkTvnU?si=FSRhDgVE13nlLF2g
3.			Radius ratio effect and coordination number	https://youtu.be/yPIDpODzIqw?si=aTPxCy5YHliALm9C
4.			Limitations of radius ratio rule	https://youtu.be/9TRF5s6N8OU?si=5Q99On-MAsH1i7HJ
5.			Lattice enthalpy and lattice Enthalpy calculation	https://youtu.be/Nls15rsza54?si=V3mykJ0MGbBsSEOv
6.			Born Haber cycle and it's application	https://youtu.be/DQXs83CIIsY?si=NvmjRHAD0YAIDAU
7.			Born-Lande equation for calculation of lattice Enthalpy	https://youtu.be/8t_yK4VMJ0w?si=Kb38cv7b2TjmQkvD
8.			Solvation enthalpy and solubility of ionic solids	https://youtu.be/aN2cEp1Em-s?si=eZ2xJfBUr0wQPCFN
9.			Polarizing Power and polarizability	https://youtu.be/npNkgZfSVoM?si=9vtU2-I6KkLEX3vu

10.			Fajans rule	https://youtu.be/nXsk0-8bWEc?si=jJR6c3WS9EF08ygD
11.			Lattice defects	https://youtu.be/zkHmtMr7pg0?si=JQVbJ5ppfQu5Zen1
12.			Semiconductor	https://youtu.be/-uCs53yi_SU?si=aupF1gZxFMIBVEZp
13.			Metallic bond	https://youtu.be/kIJ_HlaPiCQ?si=h1zqkyek24WTQFXb
14.			Weak introduction Hydrogen bonding	https://youtu.be/7DhiGRPlc0U?si=9nuru79E5SC43hD7
15.			Van dar Waals forces	https://youtu.be/ukqQ0RJmzyQ?si=U-0zFQOFWgHwllcd
16.		UNIT – 2 Covalent bond and molecular orbital theory	Valence band theory	https://youtu.be/jJDIAPE6mZw?si=sn4kNHlbLoPOxAOs
17.			Valence band theory	https://youtu.be/b30eQ9hx_T4?si=DpVV2g9El3_h4TF6
18.			Limitations of VBT	https://youtu.be/WFvxVssh-DE?si=wSU-oac4w4PS5S9d
19.			Directional character	https://youtu.be/1CZyn-jkbfU?si=SqWLgM1jENkkJEIP
20.			Hybridization balance and electron pair repulsion (VSPER)theory	https://youtu.be/4wIfs6Q7Lag?si=K mzCYTyXLINWYnD2

21.		Molecular orbital theory	Lcao method bonding non bonding and antibonding molecular orbitals	https://youtu.be/ak9hU5y0-bQ?si=bEjw_3URNnqPSLx8
22.			Homonuclear nuclear diatomic molecule energy level diagram MOT diagram	https://youtu.be/QRPO9gkeSdQ?si=Ghmo7ZJ_k94ZdnSI
23.			MOT diagram of CO	https://youtu.be/gQnno2Quj54?si=2J-qgIlgMERU9YpX
24.			MOT diagram of NO	https://youtu.be/gKxzUfEJyNA?si=tvKxQOUAAMZTC1TT
25.			Comparison of vbt and mot	https://youtu.be/ycdCEkdOarQ?si=OKaw2b65C5zgQd4T
26.			Bond strength and bond energy	https://youtu.be/LAG8HHuv_aQ?si=ihAu49Edl0DqGxyn
27.			Ionic character in covalent compound	https://youtu.be/Sd-z1yb7YBI?si=We-OHCydUgxKLWAR
28.			Dipole moment	https://youtu.be/PSCFSU7xNeU?si=J-ccewgwSt45UOg1
29.			Calculation of percentage ionic character	https://youtu.be/ZLqLatBXaXI?si=qmCF2sSDLQNbUmEf
30.			Electronegativity difference	https://youtu.be/YZkhVr1OHzk?si=jygJvngU-beQi8Ll
31.		UNIT – 3 Liquid state	Intramolecular forces	https://youtu.be/h8RFUL2KtiA?si=ASoUn1vxiHUS-Hj1
32.			Structure of liquid	https://youtu.be/IMlTJty-724?si=4EZu_BUybeHueVi9

33.			Structure different solid liquid and gas	https://youtu.be/G1nP0buaTX8?si=HboIXOyrCbdiZgxJ
34.			Liquid crystal	https://youtu.be/64A2F4XXaDI?si=xEUyjIWdHucfw4Yf
35.		Solid State	Definition of specialist and unit cell and types of lattice	https://youtu.be/SDomOHTvn1U?si=QAju0mAkRroEX6QA
36.			Law of crystallography-1 law of constancy of interfacial angles	https://youtu.be/NoKN8SqeZZI?si=JZ3kQirkOT6fqJga
37.			Low of crystallography and low of rationality of indices	https://youtube.com/watch?v=zX6xXL5m5ec&feature=shared
38.			Law of symmetry. symmetry element in crystal	https://youtu.be/911nwgumXps?si=Y-ykc42llKMexdTh
39.			Basic concept of X-Ray deflection	https://youtu.be/UxNWy3EqZIE?si=efKd-esldmrT7iUK
40.			Derivation of Bragg's equation	https://youtu.be/-MuUOCoRy94?si=Zeks8OrH7RUFe5yC
41.			Determination of crystal structure laue's method	https://youtu.be/1gVgPW9gJRo?si=uvBYB563lnivtfnv
42.			Powder method	https://youtu.be/_lGjbLLk5Q4?si=IBkhIm0GoNYQZSZD
43.			Defects in solid	https://youtu.be/zkHmtMr7pg0?si=o8_jiYMWwLjJmnZd
44.		UNIT – 4 Gaseous state	Kinetic theory of gases and its postulate	https://youtu.be/KEuIpgM2ZMQ?si=Pky1grmdLQfsS7DQ

45.			Deviation from ideal behavior	https://youtu.be/W0EOTMNMlKE?si=iMrgGGg256Iv4tHR
46.			Van der Waals equation of state	https://youtu.be/6YvDGBWn4-k?si=7Mpe-z0WrETFry15
47.		Critical phenomenon	PV isothermal of real gases	https://youtu.be/zfgs-vz2Me8?si=UUOL0H8JtmWSrQ2g
48.			Continuity of state	https://youtu.be/CiSKDnO6bp0?si=OhM7FRNZBCN-2hFql
49.			The isotherm of van der waals equation	https://youtu.be/oG00iEPGGQM?si=lyjoJ55m2Z6lohKT
50.			Relationship between critical constant and van der waals constant	https://youtu.be/WDsMGo0jIEw?si=6j5GF0e96HbjCQHJ
51.			The law of corresponding state and reduced equation of state	https://youtu.be/R1E6-MC9Ngw?si=Qn-vgkSCyVodGI03
52.		Molecular Velocities	Root mean square average and most probable velocities	https://youtu.be/fGDLyWR5YRA?si=DX49FCVZ4xXrGcAp
53.			Qualitative discussion of the Maxwell distribution molecular velocities	https://youtu.be/9X4mdCfFVPM?si=aNZBaEAIQ4Qd3ify
54.			Collision number and Mean free path and collision diameter	https://youtu.be/Cb_lqGr1pcA?si=mOPoBaTtmzEw8c54
55.			Liquid fication of gases based on Joule-Thomson effect	https://youtu.be/8y2KgkqeRn8?si=eY2INAvvuwcu7IJX
56.		Colloidal State	Definition of colloids	https://youtu.be/s8aL8JDNFPA?si=z9zAYd875m8r9S2p

57.			Classification of colloids	https://youtu.be/S4XyGzv0nNg?si=dHY5ZW_MiLAEKYeX
58.			Solid in liquid sole properties kinetic ,optical, and electrical properties	https://youtu.be/kwyYF2gjR4g?si=SjJ_WdXA6OD60CF4
59.			Stability of colloids And protective action	https://youtu.be/KMcwepurvV4?si=aTnVmfOeGwP4v7Om
60.			Hardy schulze low	https://youtu.be/zKzl7OwHeJE?si=OWRT_1_mEY_-wsZH
61.			Gold number	https://youtu.be/-OxvHz8TbJw?si=xCOfE91N1cEZuB-0
62.			Liquid in solid gels classification preparation and properties general application of colloid	https://youtu.be/yRbonthM7zs?si=WlIttKI7QVxCiYdC7
63.			Liquid in liquid emulsions type of emulsion preparation emulsifier	https://youtu.be/Cec62UUx7G0?si=EhO6AstggRKuFeD-
64.	PAPER – 2 Reaction mechanism stereochemistry aromatic hydrocarbon and chemical kinetics	UNIT – 1 Introduction concept and mechanism of organic reactions	IUPAC nomenclature of organic compound	https://www.youtube.com/live/xP1eq1HaL88?si=r2CiPvv_w02S6B32
65.			Dipol moment	https://youtu.be/PSCFSU7xNeU?s_i=2USXC3_eHZDmbuWZ
66.			Inductive and field effect electromagnetic effect	https://youtu.be/256RhZJEUv8?si=LcaWQVezJOsbKxCl

67.			Conjugation resonance and resonance energy	https://youtu.be/SeN0LZdYX9s?si=o3cVdn1pxnSt3rwi
68.			Hyperconjugation	https://youtu.be/qG-xO8kKPrs?si=0edtirRUYKlw_XVq
69.			Homolytic and heterolytic bond cleavages	https://youtu.be/tBa8nIKJShI?si=0B3yV8zlayO53ens
70.			Type of reagents electrophile and nucleophile	https://youtu.be/R4iTrdVZ-g0?si=6s-X1tC6Oqy0u0so
71.			Reactive intermediate carbocation	https://youtu.be/1512AHYtBtI?si=DRoboTIQ65aOVHU5
72.			Free radicals	https://youtu.be/wdTstLZLZmw?si=ZstBbHbTAy6XdUyD
73.			Carbanion	https://youtu.be/0F-SgMejiTg?si=QPRjhDejmtneLQzg
74.			Carbenes	https://youtu.be/YOZHVRXZfX0?si=2r9OqkpbvLNe-0g1
75.			Arynes and nitrenes	https://youtu.be/s1RP6Il1pgo?si=W4kLOLo12qZOj7
76.			Type of organic reaction	https://youtu.be/YliJmH_BXvA?si=wWQATeAwH24ZEKqH
77.			Markovnikov rule	https://youtu.be/tdVNhCVAd8U?si=AslC0CNfrN4O857b
78.			Peroxide effect	https://youtu.be/iOCD4CpuEKA?si=gceZCmgJcriP-tEv

79.			Anit markonikovs rule	https://www.youtube.com/live/wRm4hVnU9M4?si=Bl-v2jZUnwiGFoRW
80.			Saytzeffs rule	https://youtu.be/s1Ql8MqeELs?si=7jDTzGZcM4LhbxNj
81.			Hafmann elimination reaction	https://youtu.be/n8M0-GZ_IKU?si=QaFLFZ62Gb7QJBj7
82.			Energy consideration	https://youtu.be/cEGqL2fcH8k?si=7Ehor5v-3JZMDTfa
83.			Method of Determination of reaction mechanism	https://youtu.be/95bmo6GCCMQ?si=ESQhjfG_mNpn3xN3
84.			Isotope effect	https://youtu.be/mUuj3enT8FQ?si=TNhbbLmrSxcYsaEJ
85.		UNIT – 2 Stereochemistry of organic compound	Concept of isomerism	https://youtu.be/ATW3eYu6sLY?si=60Mbs9IXWIMTve_p
86.			Types of isomerism	https://youtu.be/6JtaLf1nEMQ?si=udMs0NIRlb4db0T0
87.			Difference between configuration and conformation	https://youtu.be/BRqccTbqqzM?si=yYWA1z2_sn12LmQD
88.			Flying wedge Fischer projection formula	https://youtu.be/5fAntopwIZY?si=v_n9CDtK62PovVhqm
89.		Optical isomerism	Elements of symmetry	https://youtu.be/pfHTUeRnkYg?si=VSnk6rbBn89cK6w4
90.			Molecular chirality	https://youtu.be/MG8j8FdXaN0?si=DclwyJIK_880ECH

91.			Diastereomers thero and erythro isomers meso compound	https://youtu.be/r894msGI4Xc?si=eclXXGF70taMtemF
92.			Enantiomers stereogenic centre	https://youtu.be/gKpLPbG07mU?si=QyOX0mmsNuu6m8C3
93.			Optical activity	https://youtu.be/4rbuSRBF0h4?si=Htaf33KMP18VTdGk
94.			Resolution of enantiomers inversion retention and racemization	https://youtu.be/wuU5eeN0BQ?si=0OSwIFWCQvte6VCo
95.			Relative and absolute configuration sequence rule D/L and R/S configuration	https://youtu.be/sl5ALGX-W34?si=JjWq9YgNvlecbQav
96.		Geometrical isomerism	Determination of configuration of geometrical isomerism	https://youtu.be/Pc5tcj_JbPA?si=CvuWwFQuZ_9_97ph
97.			E/Z system of nomenclature	https://youtu.be/whySv_rXhgg?si=JKMTPO4N83ldY6DW
98.			Geometrical isomerism in oximes	https://youtu.be/3bpRNT7EWjw?si=Hn1ytDwdWuUuPDEp
99.			Geometrical isomerism in oximes and alicyclic compound	https://youtu.be/5o6dmYYpBf8?si=UtE1zizl8mw29LJS
100		Conformational isomerism	Newman projection and sawhorse formulae	https://youtu.be/U7KqeZSnKng?si=l2bfTAwb6nw-5HYm
101		UNIT – 3 Arenes and aromaticity	nomenclature of benzene derivatives	https://youtu.be/2t1I76gotRU?si=2IPJxVk3QIW6Fs6e
102			the aryl group aromatic nucleus and side chain	https://youtu.be/TcNH6P-jOb4?si=SBPqdoaBWB-ARxvH

103			structure of benzene molecular formula and kekule structure	https://youtu.be/AwmzMkTE450?si=Bu4SiCr6-tV0tKWU
104			stability and carbon carbon bond length of benzene	https://youtu.be/5w1Im-zAHLg?si=7m-wQapitiLN8eea
105			benzene resonance structures mo diagram	https://youtu.be/h9QYtpgesyw?si=BC_KVwb0tb6oVF7w
106			aromatic electrophilic substitution general pattern of the mechanism	https://youtu.be/7Ni13TPj6k0?si=qW_A7D29n-9xbcZx
107			role of sigma and pi complexes in aromatic electrophilic substitution	https://youtu.be/odeHeOPtpck?si=zLI9JcE6-YDXrE_y
108			mechanism of nitration halogenation sulphonation	https://youtu.be/yjIPXMnbVEE?si=AV6ecNrIJgWMMngu
109			energy profile diagram for aromatic electrophilic substitution	https://youtu.be/kefHhrv2rrl?si=toCQ-g5uTRxIK_X5
110			activating and deactivating substituents	https://youtu.be/u7NL0JgEmWk?si=37S9hmEwwk771XhC
111			directive influence orientation and ortho/para ratio	https://youtu.be/dODM6PU9Pil?si=B20R70AAI3fXStgQ
112			side chain reaction of benzene derivatives	https://youtu.be/zFEA7RtoEt0?si=AyF8FLe3Mw7GUvfw
113			birch reduction	https://youtu.be/90ftvaJniVg?si=_uzVEjWD311ZJT7A
114		UNIT – 4 Chemical kinetics	chemical kinetics and its scope	https://youtu.be/aRBVT1oltmk?si=DBIPDL1ykJclOZCC

115			rate of reaction	https://youtu.be/WQ4nOQR-1K8?si=aGRkIxsWfIE5gAqf
116			factors influencing the rate of reaction (Concentration temperature pressure solvent light catalyst)	https://www.youtube.com/live/70CZgerSJNY?si=ftsrlgsYMQ9dYtTz
117			concentration dependence of rates	https://youtu.be/zmwZ1dUxoDw?s_i=yNBtUOb_7pvNzwYr
118			Mathematical characteristics of simple chemical reactions zero order	https://youtu.be/thcDIUcaSwA?si=2YAGLgaz65V0XH6Q
119			First' order	https://youtu.be/mjiU6fgBN_Y?si=pXpnPk1XKAH4TNHs
120			Second order	https://youtu.be/clznNBkgEuw?si=l97wTznq6DliPG3h
121			pseudo order	https://youtu.be/w6tvHI4bNdE?si=iVa3xeWcJRhGcJov
122			half life and mean life	https://youtu.be/iUxtNzVfJh8?si=sNCFLBbPKBp5leAo
123			method of determination of the order of reaction differential method	https://youtu.be/xSwF0nKBhHc?si=tzQ7z8KXtrE87KyY
124			method of half life period and isolation method	https://youtu.be/C2NDPtg9e8E?si=f3wqHNRpctqX1hU
125			radioactive decay as a first order phenomenon	https://youtu.be/bP9TIba_vJ0?si=tLHHUCXH3xvnemka
126			experiment method of chemical kinetics (Conductimetric, potentiometric, optical methods and spectrophotometric method)	https://youtube.com/watch?v=k0NFQ9BLYIM&feature=shared

127			theories of chemical kinetics	https://youtu.be/MnHgplG63WU?si=KEeRLYsYUht5sYxA
128			effect of temperature on rate of reaction arrhenius equation	https://youtu.be/Y1A7LKA60Rw?si=zTsEBwVPv_J4Esat
129			concept of activation energy	https://youtu.be/fA0i4n_LQQ?si=tW4UOOuWxh8cxX47
130			simple collision theory based on hard sphere model	https://youtu.be/6wi1iz_Ja4s?si=80-mfp-GzVTaC3iS
131			expression for the rate constant based on equilibrium constant and thermodynamic aspects	https://youtu.be/DpjU1gsR1Yq?si=kVDURmxkR9INAuZV