

कक्षा : बी.एस.सी. भाग-एक					विषय : रसायन शास्त्र
दिनांक	व्याख्यान	प्राध्यापक का नाम	प्रश्नपत्र	अध्याय	शीर्षक
01.08.2012	1.	Dr. Ram Sahay	I	Gaseous state	Postulate of kinetic theory of gases
03.08.2012	1.	Dr.K.S. Yadav	II	Atomic structure	Quantum numbers
04.08.2012	2.	Dr.K.S. Yadav	II	Atomic structure	Shape of orbitals and their energy level
06.08.2012	1.	Dr. S.K. Vernwal	III	Structure & reactivity	Hybridisation
07.08.2012	2.	Dr. S.K. Vernwal	III	Structure & reactivity	Polarity of covalent bonds
08.08.2012	2.	Dr. Ram Sahay	I	Gaseous state	Postulate of kinetic theory of gases
09.08.2012	3.	Dr. Ram Sahay	I	Gaseous state	Deviation From ideal Behaviour
11.08.2012		Dr. Ram Sahay	I	Class Teaching	
13.08.2012	3.	Dr. S.K. Vernwal	III	Structure & reactivity	Homolysis and heterolysis
14.08.2012	4.	Dr. S.K. Vernwal	III	Structure & reactivity	Free radicals
18.08.2012		Dr. Ram Sahay	I	Class Teaching	
20.08.2012	5.	Dr. S.K. Vernwal	III	Structure & reactivity	Carbocations
21.08.2012	6.	Dr. S.K. Vernwal	III	Structure & reactivity	Carbanions
22.08.2012	4.	Dr. Ram Sahay	I	Gaseous state	van der Waals equation of state
23.08.2012	5.	Dr. Ram Sahay	I	Gaseous state	Critical phenomena, PV, isotherms of real gases

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24.08.2012	3.	Dr. K.S. Yadav	II	Atomic structure	Aufbau principle, energy level diagram
25.08.2012		Dr. Ram Sahay		Evaluation	
27.08.2012	7.	Dr. S.K. Vernwal	III	Structure & reactivity	Inductive effect
28.08.2012	8.	Dr. S.K. Vernwal	III	Structure & reactivity	Electromeric effect
29.08.2012	6.	Dr. Ram Sahay	I	Gaseous state	Continuity of State the isotherms of vander
				Waal's equation.	
30.08.2012	7.	Dr. Ram Sahay	I	Gaseous state	Relationship between critical constants and van der Waals constant
01.09.2012		Dr. Ram Sahay	I	Class Teaching	
03.09.2012	9.	Dr. S.K. Vernwal	III	Structure & reactivity	Resonance
04.09.2012	10.	Dr. S.K. Vernwal	III	Structure & reactivity	Hyperconjugation
05.09.2012	8.	Dr. Ram Sahay	I	Gaseous state	The law of corresponding states reduced equation of state.
06.09.2012	9.	Dr. Ram Sahay	I	Gaseous state	Root mean square, average and most probable velocities

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07.09.2012	4.	Dr.K.S. Yadav	II	Atomic structure	Pauli's exclusion principle, Hund's rule.
08.09.2012		Dr. Ram Sahay	I	Class Teaching	
10.09.2012	11.	Dr. S.K. Vernwal	III	Structure and reactivity	Hydrogen bonding
11.09.2012	12.	Dr. S.K. Vernwal	III	Stereochemistry	Chirality, elements of symmetry
13.09.2012	10.	Dr. Ram Sahay	I	Gaseous state	Qualitative discussion of the maxwells distributionof molecular velocities.
14.09.2012	5.	Dr. K.S. Yadav	II	Atomic structure	long form of the periodic table
15.09.2012		Dr.Ram Sahay	I	Class Teaching	
18.09.2012	13.	Dr. S.K. Vernwal	III	Stereochemistry	Optical isomerism of lactic acid
19.09.2012	11.	Dr. Ram Sahay	I	Gaseous state	Collision number, mean free path
20.09.2012	12.	Dr. Ram Sahay	I	Gaseous state	Collision diameter
21.09.2012	6.	Dr. K.S. Yadav	II	Periodic properties	Type of radii
22.09.2012		Dr.Ram Sahay		Evaluation	
24.09.2012	14.	Dr. S.K. Vernwal	III	Stereochemistry	Optical isomerism of tartaric acid
25.09.2012	15.	Dr. S.K. Vernwal	III	Stereochemistry	Racemisation and resolution

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26.09.2012	13.	Dr. Ram Sahay	I	Gaseous state	Liquification of gases
27.09.2012	14.	Dr. Ram Sahay	I	Gaseous state	Based on Joule thomson effect.
01.10.2012	16.	Dr. S.K. Vernwal	III	Stereochemistry	Relative and absolute configuration
04.10.2012	15.	Dr. Ram Sahay	I	Liquid state	Inter molecular forces structure of liquid
05.10.2012	7	Dr. K.S. Yadav	II	Periodic properties	Electron affinity and its variation
06.10.2012	8.	Dr. K. S. Yadav	II	Pariodic properties	Ionization potential and its variation.
08.10.2012	17.	Dr. S.K. Vernwal	III	Stereochemistry	D-L and R-S nomenclature
11.10.2012	16.	Dr. Ram Sahay		Liquid state	Structural differences between solid liquid and gases
12.10.2012	9.	Dr. K.S. Yadav	II	Periodic properties	Effective nuclear charge and shielding effect, Slater's rule
13.10.2012	10.	Dr. K.S. Yadav	II	Periodic properties	Electronegativity, Pauling scale
17.10.2012	17.	Dr. Ram Sahay	I	Liquid state	Liquid crystals: difference between liquid crystal
18.10.2012	18.	Dr. Ram Sahay	I	Liquid state	Solid and liquid

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19.10.2012	11.	Dr. K.S. Yadav	II	Periodic properties	Mulliken scale, Allred-Rochow scale.
20.10.2012	12.	Dr. K.S. Yadav	II	Chemical bonding	Odd electron bonds
29.10.2012	18.	Dr. S.K. Vernwal	III	Stereochemistry	Geometrical isomerism
30.10.2012		Dr. S.K. Vernwal		Evaluation	
31.10.2012	19.	Dr. Ram Sahay	I	Liquid state	Structure of nematic, cholesteric phase
01.11.2012	20.	Dr. Ram Sahay	I	Solid state	Definition of space lattice, unit cell
02.11.2012	13.	Dr. K.S. Yadav	II	Chemical bonding	Hydrogen bond
03.11.2012	14.	Dr. K. S. Yadav	II	Chemical bonding	Metallic bond & lattice energy.
05.11.2012	19.	Dr. S.K. Vernwal	III	Stereochemistry	E-Z nomenclature
06.11.2012		Dr. S.K. Vernwal	III	Class Teaching	
07.11.2012	21.	Dr. Ram Sahay	I	Solid state	Law of crystallography (i) law of constance of interfacial angles.
08.11.2012	22.	Dr. Ram Sahay	I	Solid state	Law of rationality of indices, law of symmetry, symmetry element in crystals.
09.11.2012	15.	Dr. K.S. Yadav	II	Chemical bonding	Born-Haber cycle

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16.11.2012	16.	Dr. K.S. Yadav	II	Chemical bonding	Polarization & Fajan's rule
17.11.2012	17.	Dr. K.S. Yadav	II	Chemical bonding	Exceptions of octet rule and maximum covalency.
19.11.2012	20.	Dr. S.K. Vernwal	III	Stereochemistry	Newmann and Sawhorse projection formula
20.11.2012		Dr. S.K. Vernwal	III	Class Teaching	
21.11.2012	23.	Dr. Ram Sahay	I	Solid state	X-ray diffraction by crystal, derivation of Braggs equation
22.11.2012	24.	Dr. Ram Sahay	I	Solid state	Determination of crystal structure of NaCl and KCl
23.11.2012	18.	Dr. K.S. Yadav	II	Chemical bonding	Hybridization sp , sp^2 , sp^3
26.11.2012	21.	Dr. S.K. Vernwal	III	Stereochemistry	Conformations of ethane and n-butane
27.11.2012		Dr. S.K. Vernwal		Evaluation	
29.11.2012	25.	Dr. Ram Sahay	I	Solid state	A Brief introduction to point defect in crystal semiconductor
30.11.2012	19.	Dr. K.S. Yadav	II	Chemical bonding	Hybridization sp^3d & sp^3d^2

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01.12.2012	20.	Dr. K.S. Yadav	II	Chemical bonding	VSEPR theory
03.12.2012	22.	Dr. S.K. Vernwal	III	Alkyl halides & Grignard reagents	Mechanism of nucleophilic substitution reactions
07.12.2012	21.	Dr. K.S. Yadav	II	Chemical bonding	Structure of NH_3 , H_2O , SF_4 , H_3O^+
08.12.2012	22.	Dr. K. S. Yadav	II	Chemical bonding	Structure of ClF_3 , ICl_2^- , I_3^-
11.12.2012	23.	Dr. S.K. Vernwal	III	Alkyl halides & Grignard reagents	SN^1 and SN^2 mechanism.
12.12.2012	26.	Dr. Ram Sahay	I	Solid state	Super conductor and nano-particles materials
13.12.2012		Dr. K. S. Yadav	II	Class Teaching	
14.12.2012	23.	Dr. K.S. Yadav	II	Chemical bonding	Structure of various type of molecules having lone & bond pair.
15.12.2012	24.	Dr. K.S. Yadav	II	Chemical bonding	Metallic bond, three centre bond
17.12.2012	24.	Dr. S.K. Vernwal	III	Alkyl halides and Grignard reagents	Preparation of Grignard reagents

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18.12.2012	25.	Dr. S.K. Vernwal	III	Alkyl halides and Grignard reagents	Synthetic applications of Grignard reagents
19.12.2012	27.	Dr. Ram Sahay	I	Colloidal state & macro molecules	Definition of colloids, classification of colloids
20.12.2012		Dr. K. S. Yadav	II	Class Teaching	
21.12.2012	25.	Dr. Ram Sahay	II	General studies of s-block elements	Discussion on I group elements
22.12.2012	26.	Dr. Ram Sahay	II	General studies of s-block elements	Discussion on II group elements
26.12.2012	28.	Dr. Ram Sahay	I	Colloidal state & macro molecules	Solid in liquid (sols): properties, kinetic optical and electrical
27.12.2012		Dr. K. S. Yadav		Monthly Evaluation	
28.12.2012	27.	Dr. Ram Sahay	II	General studies of p-block elements	Discussion on 13 th group elements

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29.12.2012	28.	Dr. Ram Sahay	II	General studies of p-block elements	Discussion on 14 th group elements
31.12.2012	26.	Dr. S.K.Vernwal	III	Alkyl halides and Grignard reagents	Synthetic applications of Grignard reagents
01.01.2013	27.	Dr. S.K. Vernwal	III	Alcohols and ethers	Distinction of alcohols
02.01.2013	29.	Dr. Ram Sahay	I	Colloidal state & macro molecules	Stability of colloids, protective action hardy-schulze law, gold, number.
03.01.2013		Dr. Ram Sahay	II	Class Teaching	
04.01.2013	29.	Dr. Ram Sahay	II	General studies of p-block elements	Catenation and inert pair effect
07.01.2013	28.	Dr. S.K. Vernwal	III	Alcohols and ethers	Mechanism of dehydration of alcohols
08.01.2013	29.	Dr. S.K. Vernwal	III	Alcohols and ethers	Preparation of glycerol
09.01.2013	30.	Dr. Ram Sahay	I	Colloidal state & macro molecules	Liquid in liquid (emulsion) types of emulsion, preparation, emulsifier)
10.01.2013		Ram Sahay	I	Class Teaching	

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11.01.2013	30.	Dr. Ram Sahay	II	General studies of p-block elements	Discussion on 15 th group elements
12.01.2013	31.	Dr. Ram Sahay	II	General studies of p-block element	Discussion on 16 th group element
16.01.2013	31.	Dr. Ram Sahay	I	Colloidal state & macro molecules	Liquid in solid (gels) classification, preparation and properties inhibition general application of ,colloids
17.01.2013		Ram Sahay	I	Class Teaching	
18.01.2013	32.	Dr. Ram Sahay	II	General studies of p-block element	Trends of their oxides hydrides & halides
19.01.2013	33.	Dr. Ram Sahay	II	Occurrence, extraction & isolation of metals	Metallurgy of lithium
21.01.2013	30.	Dr. S.K. Vernwal	III	Alcohols and ethers	Reactions of glycerol
22.01.2013	31.	Dr. S.K. Vernwal	III	Alcohols and ethers	Williamson's synthesis

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23.01.2013	32.	Dr. Ram Sahay	I	Colloidal state & macro molecules	Macromolecules and their molecular weight
24.01.2013		Dr. Ram Sahay		Evaluation	
25.01.2013	34.	Dr. Ram Sahay	II	Occurrence, extraction & isolation of metals	Ores & metallurgy of Be
28.01.2013	32.	Dr. S.K. Vernwal	III	Alcohols and ethers	Cleavage of Oxonium salts, crown ethers
29.01.2013	33.	Dr. S.K. Vernwal	III	General reactions of Carbonyl compounds	Mechanism of addition of HCN
31.01.2013	33.	Dr. Ram Sahay	I	Colloidal state & macro molecules	Determination of molecular weight of macro molecules by osmotic pressure & viscosity methods
*	34.	Dr. Ram Sahay	I	Colloidal state & macro molecules	Concepts of micelles and critical micelle concentration, A brief introduction to conducting and light emitting polymer

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*	35.	Dr. Ram Sahay	I	Mathematical concepts & computer	Logarithmic relation curve sketching line groups and calculation of slopes
*	36.	Dr. Ram Sahay	I	Mathematical concepts and computer	Differentiation of functions like $f(x)$, e^x , x^n , $\sin x$, $\log x$ Maxima and minima partial differentiation and reciprocity relation.
*	34.	Dr. S.K. Vernwal	III	General reactions of carbonyl compounds	Addition of sodium bisulphite and alcohol
*	37.	Dr. Ram Sahay	I	Mathematical concepts and computer	Integration of some useful/relevant functions permutation and combinations
*	38.	Dr. Ram Sahay	I	Mathematical concepts and computer	Factorials, probability
*	35.	Dr. S.K. Vernwal	III	General reactions of carbonyl compounds	Catalytic reduction, LiAlH_4
*	36.	Dr. S.K. Vernwal	III	General reactions of carbonyl compounds	Aldol condensation

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*	39.	Dr. Ram Sahay	I	Mathematical concepts and computer	General introduction to computers different components of a computer
*	40.	Dr. Ram Sahay	I	Mathematical concepts and computer	Hardware and software, input-output devices, binary numbers and arithmetic
*	35.	Dr. Ram Sahay	II	Extraction & isolation of fluorine	Metallurgy of F
*	36.	Dr. Ram Sahay	II	Chemistry of diborane	Preparation, properties & structure of diborane
*	37.	Dr.S.K. Vernwal	III	General reactions of carbonyl compounds	Cannizzaro reaction
*	38.	Dr.S.K. Vernwal	III	General reactions of carbonyl compounds	Clemmensen reduction
*	41.	Dr. Ram Sahay	I	Mathematical concepts and computer	Introductions to computer languages

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*	42.	Dr. Ram Sahay	I	Mathematical concepts and computer	Programming operating systems
*	37.	Dr. Ram Sahay	II	Chemistry of borazine	Preparation & structure of borazine
*	38.	Dr. Ram Sahay	II	Chemistry of hyrazine	Preparation, property & structure of hydrazine.
*	39.	Dr. S.K. Vernwal	III	General reactions of carbonyl compounds	Wolf-Kishner reduction
*	40.	Dr. S.K. Vernwal	III	General reactions of carbonyl compounds	Meerwein-Pondorf-Verley reduction.
*	43.	Dr. Ram Sahay	I	Chemical kinetics & catalysis	Chemical kinetics and its scope rate of a reaction.
*	44.	Dr. Ram Sahay	I	Chemical kinetics & catalysis	Factors influencing the rate of a reaction. concentration, temperatures.
*	39.	Dr. Ram Sahay	II	Interhalogen compounds.	Preparation & properties of interhalogens
*	40.	Dr. Ram Sahay	II	Polyhalides	Preparation & properties of polyhalides

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*	41.	Dr. S.K. Vernwal	III	Compounds containing reactive methylene group	Preparation of acetoacetic ester
*	42.	Dr. S.K. Vernwal	III	Compounds containing reactive methylene group	Synthetic uses of acetoacetic ester
*	45.	Dr. Ram Sahay	I	Chemical kinetic & catalysis	Pressure solvent, light, catalyst concentration dependence of rate, mathematical characteristics
*	46.	Dr. Ram Sahay	I	Chemical kinetic & Catalysis	Simple reaction, zero order, second order pseudo order, half life and mean life.
*	41.	Dr. Ram Sahay	II	Xenon fluorides	Preparation, properties & structure of xenon fluorides
*	42.	Dr. Ram Sahay	II	Oxyacids of B	Preparation & structure of acids of B
*	43.	Dr. S.K. Vernwal	III	Compounds containing reactive methylene group	Keto-enol tautomerism

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*	44.	Dr. S.K. Vernwal	III	Compounds containing reactive methylene group	Preparation of malonic ester
*	47.	Dr. Ram Sahay	I	Chemical kinetic & catalysis	Determination of the order of reaction differential methods, methods for integration
*	48.	Dr. Ram Sahay	I	Chemical kinetic & catalysis	Method of half life period and isolation method catalysis radioactive decay as a first order phenomenon
*	43.	Dr. Ram Sahay	II	Oxyacids of P and S	Preparation and structure of P & S
*	45.	Dr.S.K. Vernwal	III	Compounds containing reactive methylene group	Synthetic uses of malonic ester
*	46.	Dr. S.K. Vernwal	III	Compounds containing reactive methylene group	Synthetic uses of malonic ester
*	47.	Dr. S.K. Vernwal	III	Carboxylic acids	Structure of carboxyl group, acid strength
*	49.	Dr. Ram Sahay	I	Chemical kinetic & catalysis	Experimental methods of chemical kinetics conductometric, potentiometric, optical method

महाराणा प्रताप स्नातकोत्तर महाविद्यालय, जंगल धूसड़, गोरखपुर

पाठ्यक्रम योजना

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कक्षा : बी.एस.सी. भाग-एक					विषय : रसायन शास्त्र
दिनांक	व्याख्यान	प्राध्यापक का नाम	प्रश्नपत्र	अध्याय	शीर्षक
*	50.	Dr. Ram Sahay	I	Chemical kinetic & catalysis	Polarimetry and spectrophotometer, theories of chemical kinetics
*	51.	Dr. Ram Sahay	I	Chemical kinetic & catalysis	Effect of temperature on rate of reaction, Arrhenious equation
*	48.	Dr. S.K. Vernwal	III	Carboxylic acids	Mechanism of esterification
*	49.	Dr.S.K. Vernwal	III	Carboxylic acids	Mechanism of ester hydralysis (A_{AC}^2)
*	50.	Dr.S.K. Vernwal	III	Carboxylic acids	Mechanism of ester hydrolysis (B_{AC}^2)
*	52.	Dr. Ram Sahay	I	Chemical kinetics & Catalysis	Concept of activation energy, simple collision theory based on hard sphere modal
*	53.	Dr. Ram Sahay	I	Chemical kinetics & Catalysis	Transition state theory (equilibrium) hypo thesis
*	54.	Dr. Ram Sahay	I	Chemical kinetics & Catalysis	Expression for the rate constant based on equilibrium constant and thermodynamic aspect
*	51.	Dr. S.K. Vernwal	III	Carboxylic acids	Mechanism of acetylation

कक्षा : बी.एस.सी. भाग-एक					विषय : रसायन शास्त्र
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*	52.	Dr. S.K. Vernwal	III	Alkenes, alkynes, alka dienes & cycloalkanes	Mechanism of addition of hydrogen and halogens
*	53.	Dr. S.K. Vernwal	III	Alkenes, alkynes, alka dienes & cycloalkanes	Addition of water and sulphuric acid
*	55.	Dr. Ram Sahay	I	Chemical kineties & catalysis	Catalysis, characterics of catalysed reaction, classification of catalysis
*	56.	Dr. Ram Sahay	I	Chemical kinetics & catalysis	Miscellaneous examples.
*	57.	Dr. Ram Sahay	I	Chemical kinetics & catalysis	Problems and solutions.
*	54.	Dr. S.K. Vernwal	III	Alkenes, alkynes, alkadienes & cycloalkanes	Ozonolysis
*	55.	Dr. S.K. Vernwal	III	Alkenes, alkynes, alkadienes & cycloalkanes	Hydroxylation, epoxidation

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*	56.	Dr. S.K. Vernwal	III	Alkenes, alkynes, alkadienes & cycloalkanes	Hydroboration, acetylene as carbon acid.
*	57.	Dr. S.K. Vernwal	III	Alkenes, alkynes, alkadienes & cycloalkanes	Hydration and halogenation
*	58.	Dr. S.K. Vernwal	III	Alkenes, alkynes, alkadienes & cycloalkanes	Addition of HCl and organic acid
*	59.	Dr. S.K. Vernwal	III	Alkenes, alkynes, alkadienes & cycloalkanes	Stability and addition reactions of 1,3- butadiene
*	60.	Dr. S.K. Vernwal	III	Alkenes, alkynes, alkadienes & cycloalkanes	Preparation and properties of small ring cycloalkanes.
*	61.	Dr. S.K. Vernwal	III	Nitrogen containing Compounds	Alkyl nitrites and nitro alkanes
*	62.	Dr. S.K. Vernwal	III	Nitrogen containing compounds	Alkyl cyanides and alkyl isocyanides

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*	63.	Dr. S.K. Vernwal	III	Nitrogen containing compounds	Amines, classification and preparation
*	64.	Dr. S.K. Vernwal	III	Nitrogen containing compounds	General reactions of amines
*	65.	Dr. S.K. Vernwal	III	Nitrogen containing compounds	Distinction and separation of 1°, 2° and 3° amines
*	66.	Dr. S.K. Vernwal	III	Nitrogen containing compounds	Basicity of amines.

Extra Clases

Paper- I (Physical Chemistry) - Dr. Ram Sahay (57)

Paper- II (Inorganic Chemistry) - Dr. K.S. Yadav/Dr. Ram Sahay(43)

Paper- III (Organic Chemistry)- Dr. S.K. Vernwal (66)