DR. AARTI TREHAN

LESSON PLANS : ODD SEMESTER -2020-21

DR. AARTI TREHAN

BSc 5th Semester	LESSON PLAN:	LEARNING OUTCOMES
CH- 303	SESSION: 2020-2021	
S. NO.	LESSON PLAN	LEARNING OUTCOMES
WEEK : 1		**Student will be able to**
L-1	Principle of nuclear magnetic resonance,	Understand & explain
L-2	Number of signals, peak areas, equivalent and nonequivalent protons	Understand & Tell
L-3	Chemical shift, shielding and deshielding of protons,	Understand & explain
WEEK : 2		
L-4	TMS & Positions of signals	Understand & explain
L-5	Peak area & proton counting	Learn

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L-6	Factors affecting chemical shift	Knows & understands the concept
WEEK :3		
L-7	Splitting of signals	Understand & Apply the Knowledge
L- 8	Coupling constant & its applications.	Understand the new concept
L- 9	Magnetic equivalence of protons	Understand
WEEK : 4		
L- 10	Discussion of PMR spectra of the molecules: ethyl bromide, n- propyl bromide, isopropyl bromide, 1 , 1 - dibromoethane, ethanol, acetaldehyde, ethyl acetate, toluene, benzaldehyde and acetophenone..	Understand the new concept
L-11	Discussion of PMR spectra of the molecules: ethyl bromide, n- propyl bromide, isopropyl bromide, 1 , 1 - dibromoethane, ethanol, acetaldehyde, ethyl acetate, toluene, benzaldehyde and acetophenone..	Apply the knowledge & concepts
L -12	REVISION	.Clear the doubts

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WEEK : 5		
L- 13	CLASS TEST	Assess oneself
L- 14	Organomagnesium compounds: the Grignard reagents- formation, structure	Explain , apply his knowledge & evaluate oneself
L- 15	Organomagnesium compounds: chemical reactions. Organozinc compounds: formation and chemical reactions.	Knows and learns metho & reactions
WEEK : 6		
L- 16	Organolithium compounds: formation and chemical reactions	Knows and learns methods & reactions
L- 17	Comparison of organomagnesium and organolithium compounds	Differentiate
L- 18	Revision	Clear the doubts
WEEK : 7		
L- 19	SESSIONAL	Evaluate oneself

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L- 20	Classification and nomenclature of Monosaccharides	Know & understand
L- 21	Open chain structure of Glucose	Clear the concepts
WEEK : 8		
L-22	Limitation of open chain structure	Knows and learn the reasons
L-23	Ring structure of Glucose	Understand the concept and reasons
L- 24	Mutarotation in Glucose & its mechanism	Know & understand
WEEK : 9		
L- 25	Evidences in favor of ring structure of Glucose	Analyze
L- 26	Chain lengthening and chain shortening of aldoses.	Know & understand the process
L- 27	Interconversion of glucose and fructose	Understand & Do the conversion

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WEEK : 10		
L- 28	Conversion of glucose into mannose & vice versa	Do the conversion
L- 29	Mechanism of osazone formation,	Understand & learn
L- 30	CLASS TEST	Assess oneself
WEEK : 11		
L- 31	Determination of ring size of glucose and fructose.	Know various methods
L- 32	Determination of ring size of glucose and fructose.	Write & determine the size
L-33	Open chain and cyclic structure of D(+)- glucose & D(-) fructose	Understand & write the structure
WEEK : 12		
L- 34	CLASS Test	Assess himself
L- 35	. Configuration of monosaccharides. Erythro and threo diastereomers.	Understand the things

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L- 36	Formation of glycosides	Learn
WEEK : 13		
L- 37	Structures of ribose and deoxyribose.	Write the structure
L- 38	Disaccharides (maltose, sucrose and lactose	Write the structure
L- 39	Disaccharides (maltose, sucrose and lactose	Understand the linkages
WEEK : 14		
L- 40	REVISION	Clear the doubts
L- 41	CLASS TEST	.Self assess
L- 42	Polysaccharides (starch)	Learn & understand
WEEK : 15		
L- 43	Polysaccharides (cellulose)	Understand & able to differentiate with starch

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Sahid Markanda

L- 44	REVISION	Clear the doubts
L- 45	REVISION	Clear the doubts

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BSc 3rd Semester **LESSON PLAN:** **LEARNING OUTCOMES**

CH- 203 **SESSION: 2020-2021**

S. NO.	LESSON PLAN	LEARNING OUTCOMES
WEEK : 1		Student will be able to
L-1	Absorption laws (Beer- Lambert law)	Define and understand laws
L-2	Limitations of laws & molar absorptivity,	Understand & explain
L-3	Numericals	Develop problem solving attitude
WEEK : 2		
L-4	Principal of UV spectroscopy	Understand & explain

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L-5	Types of electronic transitions, effect of conjugation..	To understand & differentiate
L-6	Concept of chromophore and auxochrome. Bathochromic, hypsochromic, hyperchromic and hypo chromic shifts.	Knows & understands the concept
WEEK :3		
L-7	Effect of conjugation	Apply the Knowledge
L- 8	Woodward- Fieser rules, calculation of wavelength of simple conjugated dienes	Understand the new concept
L- 9	Calculation of wavelength of conjugated dienes	Enhance the knowledge
WEEK : 4		
L- 10	Woodward- Fieser rules, calculation of wavelength of simple alpha ,beta - unsaturated ketones.	Understand the new concept
L-11	Calculation of wavelength of simple alpha ,beta - unsaturated ketones.	Enhance the knowledge

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L -12	Revision	Clear the doubts
WEEK : 5		
L- 13	Class Test (Quiz)	Analyze his concepts
L- 14	Applications of UV Spectroscopy.	Explain and apply his knowledge
L- 15	Monohydric alcohols: nomenclature	Name & classify alcohols
WEEK : 6		
L- 16	Methods of formation by reduction of aldehydes, ketones, carboxylic acids and esters.	Knows and learns methods
L- 17	Hydrogen bonding. Acidic nature of alcohols, Reactions of alcohols.	Explain & understand Properties of alcohols
L- 18	SESSIONAL	Evaluate himself

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WEEK : 7		
L- 19	Dihydric alcohols — nomenclature, methods of formation,	Learn the topic
L- 20	chemical reactions of vicinal glycols, oxidative cleavage [$Pb(OAc)_4$ and HIO_4] and pinacol- pinacolone rearrangement.	Know & understand the mechanism
L- 21	Revision	Clear the concepts
WEEK : 8		
L-22	Nomenclature, structure and bonding. Preparation of phenols, physical properties	Knows and learns methods
L-23	Acidic character of Phenol. Comparative acidic strengths of alcohols and phenols, resonance stabilization of phenoxide ion.	Understand the concept and reasons
L- 24	Reactions of phenols — electrophilic aromatic substitution, Mechanisms of Fries rearrangement	Know & understand
WEEK : 9		

L- 25	Mechanisms of Claisen rearrangement, Reimer-Tiemann reaction, Kolbe' s reaction and Schotten and Baumann reactions	Understand the mechanism
L- 26	Synthesis of epoxides. Acid and base- catalyzed ring opening of epoxides,	Know & understand the mechanism
L- 27	orientation of epoxide ring opening, reactions of Grignard and organolithium reagents with epoxides.	Understand & correlate
WEEK : 10		
L- 28	Class Test	Assess his learning level
L- 29	Nomenclature of Carboxylic acids, structure and bonding, physical properties,	Name & learn
L- 30	Acidity of carboxylic acids, effects of substituents on acid strength	Understand the factors & reasons
WEEK : 11		
L- 31	Preparation of carboxylic acids.	Know various methods

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L- 32	Reactions of carboxylic acids. Hell- Volhard-Zelinsky reaction. Reduction of carboxylic acids.	Know & learn various reactions
L-33	Mechanism of decarboxylation.	Understand the how decarboxylation takes place
WEEK : 12		
L- 34	Class Test	Assess himself
L- 35	Acid derivatives nomenclature	Name different derivatives
L- 36	Relative stability of acyl derivatives.	Compare different derivatives
WEEK : 13		
L- 37	Group discussion	Clear the concepts
L- 38	Physical properties of acid derivatives	Understand the concept

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L- 39	interconversion of acid derivatives by nucleophilic acyl substitution.	Understand the concept
WEEK : 14		
L- 40	Acid halides & anhydrides	Learn the reactions
L- 41	Acid amides	Learn the reactions
L- 42	Esters	Learn the reactions
WEEK : 15		
L- 43	Mechanisms of esterification and hydrolysis (acidic and basic).	Understand & able to differentiate
L- 44	Revision	Clear the doubts
L- 45	REVISION	Clear the doubts

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BSc First Semester **LESSON PLAN: LEARNING OUTCOMES**

CH -103 **SESSION: 2020-2021**

S. NO.	LESSON PLAN	LEARNING OUTCOMES
WEEK : 1		Student will be able to
L-1	IUPAC nomenclature of branched and unbranched alkanes,	name the organic compounds
L-2	Curved arrow notation, drawing electron movements with arrows, half-headed and double-headed arrows, homolytic and heterolytic bond breaking	Understand type of arrows & breaking of bonds
L-3	Localized and delocalized chemical bond, Van der Waal' s interactions,	Understand types of bond & interactions
WEEK : 2		
L-4	Group Discussion &Oral Test	Retain the things done
L-5	Inductive effect, Electromeric effect & their comparison.	To understand & differentiate

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L-6	Resonance	Knows & understands the concept
WEEK :3		
L-7	Resonance applications,	Apply the Knowledge
L- 8	Hyperconjugation	Understand the new concept
L- 9	Types of reagents – electrophiles and nucleophiles.	Enhance the knowledge
WEEK : 4		
L- 10	Types of organic reactions.	Classify different types of organic reactions
L-11	Revision	Clear the doubts
L -12	Class Test (Quiz)	Analyze his concepts
WEEK : 5		

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L- 13	Reactive intermediates: Carbocation(formation, structure & stability).	Explain, classify and understand the carbocation Justify the order of stability
L- 14	carbanions(formation, structure & stability).	Explain, classify and understand the carbanions Justify the order of stability
L- 15	free radicals, (formation, structure & stability).	Explain, classify and understand the free radicals Justify the order of stability
WEEK : 6		
L- 16	carbenes,(formation, structure & stability).	Explain, classify and understand the carbenes Justify the order of stability

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L- 17	Revision	Clear the doubts
L- 18	SESSIONAL	Evaluate himself
WEEK : 7		
L- 19	ALKANES: Isomerism in alkanes, sources	Learn the topic
L- 20	Methods of formation of Alkanes: Wurtz reaction, Kolbe reaction, Corey- House reaction and decarboxylation of carboxylic acids,	Know & learn methods
L- 21	Physical properties of Alkanes	Apply the concepts
WEEK : 8		
L-22	Mechanism of free radical halogenation of alkanes	Understand how reaction is taking place
L-23	ALKANES: reactivity and selectivity.	Distinguish the reactivity and selectivity
L- 24	Class Test	Assess his learning level
WEEK : 9		

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L- 25	Cycloalkanes: nomenclature	Learn the nomenclature
L- 26	synthesis of cycloalkanes and their derivatives – photochemical (2+2) cycloaddition reactions, , dehalogenation of a,w-dihalides, , pyrolysis of calcium or barium salts of dicarboxylic acids	Know & learn methods
L- 27	Baeyer's strain theory and its limitations., theory of strainless rings.	Understand & correlate
WEEK : 10		
L- 28	Concept of isomerism. Types of isomerism.	Categorize different isomers
L- 29	Conformational isomerism : conformational analysis of ethane	Draw different isomers & understand their stability
L- 30	n- butane, conformations	Draw different isomers & understand their stability
WEEK : 11		

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L- 31	Conformations of cyclohexane, axial and equatorial bonds. Newman projection and Sawhorse formulae	Draw different isomers & understand their stability
L- 32	Difference between configuration and conformation.	
L-33	Class Test	
WEEK : 12		
L- 34	Geometric isomerism : E & Z system of nomenclature	Understand and Differentiate
L- 35	Determination of configuration of geometric isomers.	Know the methods
L- 36	Class Test	Assess himself
WEEK : 13		
L- 37	Optical isomerism :optical activity	Define
L- 38	elements of symmetry, molecular chirality,, stereogenic center,	Understand the concept
L- 39	chiral and achiral molecules with two stereogenic centers,	Understand the concept

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WEEK : 14		
L- 40	Enantiomers or diastereomers,meso compounds	Define, understand and diiferentiate
L- 41	Resolution of enantiomers, inversion,	Understand the process
L- 42	Retention and racemization. threo and erythro diastereomers	Understand the process & label the isomers
WEEK : 15		
L- 43	Relative and absolute configuration, sequence rules, R & S systems of nomenclature	Understand & label the isomers
L- 44	R&S Nomenclature.	Understand the process & label the isomers
L- 45	REVISION	Clear the doubts

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INORGANIC CHEMISTRY CH- 101

CLASS-B.SC I(1ST SEMESTER) DR. AARTI TREHAN

LESSONPLANNER

Week 1: L-1 to L-3

Basic introduction of atomic structure, periodic properties, covalent bonds, ionic bonds.

Week 2: L-4---L-6

Wave mechanical model, quantum numbers, atomic orbitals , wave function and distribution curve.

Week 3: L-7---L-9

Shapes of s, p, d orbitals, Paulis exclusion principle, Hunds rule.

Week 4: L-10---12

Energy level of hydrogen like atom, Polyelectronic atomic system, Afbau principle, limitations, revision , doubts, test.

Week 5: L-13---L-15

Stability of completely filled, half filled and empty subshells, EAN, slaters rule.

Week 6: L-16---L-18

Trends in periodic properties, electronic configuration, atomic and ionic radii, ionization energy, electron affinity, electronegativity.

Week 7: L-19---L-21

REVISION, SESSIONAL

Week 8: L-22---24

Introduction to covalent bond , valence bond theory and limitations, valence bond method, hybridization.

Week 9: L-25--27

VSEPR theory, molecular orbital theory of heteronuclear molecules, bond length, revision , test.

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Week 10: L-28---L-30

Bond energy, ionic character from electronegativiy and dipole moment, molecular structure.

Week 11: L-31---L-33

Introduction to ionic solids, size effects, radius ratio rule.

Week 12: L-34----L-36

Important ionic structures.

Week 13: L-37---L39

Lattice energy

Week: 14 L- 40----L-42

Polarization and polarizability.

Week 15: L-43- - L-45

Revision via test.

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BOTANY PAPER -2

(DIVERSITY OF MICROBES)

CLASS-B.SC I(1^{ST} SEMESTER)

PLANNER

SESSION -2020-21

November :Week 3: Structure and functions of Cell Wall

November: Week 4:Plasma Membrane

december: Week 1:Nucleus details

decenmber: Week2: Golgi Apparatus and Endoplasmic Reticulum

December: Week 3: Chloroplast and Mitochondria

December: Week 4: Lysosomes ,Peroxisomes ,Vacuoles

january :Week 1: Mitosis

January : Week 2: Meiosis

January: Week 3: Ultrastructure of Centromere and Telomere

January :Week4: Chromosomes

february:Week 1:Chromosome Alteration

february: Week 2:Variation in Chromosome Number

February: week 3: Sex Chromosomes and Sex Determination

BOTANY PAPER -1

(PLANT ANATOMY)

CLASS-B.SC 2(3rd SEMESTER)

PLANNER

SESSION -2020-21

November :Week 3: Diversity in Plant forms & Tissue

November: Week 4:Shoot System

december: Week 1:Secondary growth in different Dicot stem

december: Week2: Secondary growth in different Dicot stem

December: Week 3: Types of leaf and Epidermis

December: Week 4: Anatomy of Monocot and Dicot leaf

january :Week 1: Leaf Abscission ,Stomata

January : Week 2: Root System

January: Week 3: Secondary growth in Roots

January :Week4:Modification in Roots

february:Week 1:Modification in Roots

february: Week 2:Revision and Test

February: week 3: Revision and Test

BOTANY PAPER -1

(DIVERSITY OF MICROBES)

CLASS-B.SC I(1ST SEMESTER)

PLANNER

SESSION -2020-21

BOTANY PAPER -1

(DIVERSITY OF MICROBES)

CLASS-B.SC I (1^{ST} SEMESTER)

PLANNER

SESSION -2020-21

November :Week 1: General Characters of Algae

November: Week 2:General characters of Algae and Life history of Volvox

November: Week 3:Life cycle of Oedogonium

November: Week: Life Cycle of Vaucheria and Ectocarpus

December: Week 1: Polysiphonia

December: Week 2: Nostoc and Economic importance of Algae

December :Week 3: General characters of Fungi

December: Week 4: Phytophthora

January: Week 1: Mucor and Penicillium

January :Week2: Life cycle of Puccinia

January :Week 3:Agaricus & Colletotrichum

January: Week 4:Lichens and Classification of Fungi

February: week 1: Economic importance of Fungi ,Virus

February: Week 2:Classification of algae ,Structure of Bacteria

February: Week 3:Reproduction of Bacteria

BOTANY (PAPER -1)

(BIOLOGY AND DIVERSITY OF SEED PLANTS -1)

CLASS-B.SC 2(3^{rd} SEMESTER)

PLANNER

SESSION -2020-21

October :Week 1: Life Cycle of Cycas

October: Week 2:Life cycle of Cycas

October: Week 3:life cycle of Cycas

October: Week4: Life cycle of Pinus

November: Week 1: Pinus

November: Week 2: Ephedra

November :Week 3: Ephedra

November: Week 4: General characters /diversity of Gymnosperm

December: Week 1: Classification of Pilger and Melchiors

December :Week2: Geological Time table

December :Week 3:Evolution of seed habit

December: Week 4:Fossil and Fossilization

January: week 1: Fossil and Fossilization

January: Week 2:Lyginopteris

January: Week 3:Williamsonia

January :week 4:Cycadeoidea

February :week 1:General characters of Angiosperms

February:week2:General Characters of Angiosperms

February :week3: Revision and Test

BOTANY PAPER -1

(PLANT PHYSIOLOGY)

CLASS-B.SC 3(5^{th} SEMESTER)

PLANNER

SESSION -2020-21

October :Week 1: Imbibition ,Diffusion and Osmosis

October: Week 2: Osmosis and Plasmolysis

October: Week 3:Absorbtion and Transport of water

October: Week4: Transpiration

November: Week 1: Mineral Nutrition

November: Week :Mineral nutrition

November :Week 3: Transport of organic substances

November: Week 4: Transport of organic substances

December: Week 1: Photosynthesis

December :Week2:Photosynthesis

December :Week 3:Photosynthesis

December: Week 4:Photosynthesis

January: week 1: Respiration

January: Week 2:Respiration

January: Week 3:Respiration

January :Week 4:Plant movements

February :Week 1:Seed dormancy

February: Week2:Photoperiodism and fruit ripening

February :week3: Revision and test

BOTANY(PAPER -2)

(ECOLOGY)

CLASS-B.SC 3(5^{TH} SEMESTER)

PLANNER

SESSION -2020-21

October :Week 1: Introduction to Ecology

October: Week 2: Environment

October: Week 3:Environment

October: Week4: Environment

November: Week 1: Population Ecoloogy

November: Week :Population Ecology

November :Week 3:Population Ecology

November: Week 4: Community Ecology

December: Week 1: Community Ecology

December :Week2:Ecosystem

December :Week 3: Ecosystem

December: Week 4:Biochemical Cycles

January: week 1: Phytogeography in India

January: Week 2:Phytogeography in India

January: Week 3:Environment Pollution

January :Week 4:Environment Pollution

February :Week 1:Global CShange

February:Week2: Revision

February :Week3: Revision and Test

Lesson plan for the session (2020-21)

Odd semester B.Sc 1st

1st sem (Nov 20 – Feb 21)

Paper - Electricity & magnetism , PH – 102

November 1st week : Gradient of a scalar and its physical significance, Line, Surface and Volume integrals of a vector and their physical significance,

Nov 2nd week : Flux of a vector field, Divergence and curl of a vector and their physical significance,

Nov 3rd week : Gauss's divergence theorem, Stoke's theorem , Derivation of electric field E from potential as gradient.

Nov 4th week :, Derivation of Laplace and Poisson equations, Electric flux, Gauss's Law, Mechanical force of charged surface, Energy per unit volume.

Dec 1st week : : Magnetic induction, Magnetic flux, Solenoidal nature of vector field of induction, properties of (i)del . B=0 , (ii) del.B =mu J

Dec 2nd week : , Electronic theory of dia and paramagnetism, Domain theory of ferromagnetism (Langevin's theory)

Dec 3rd week : , Cycle of magnetization- hystresis loop (Energy dissipation, Hystresis loss and importance of Hystresis Curve)

Dec 4th week : Revision of chapter magnetism & class test

Jan 1st week : : Maxwell equations and their derivations, Displacement current, Vector and Scalar potentials,

Jan 2nd week : Boundary conditions at interface between two different media

Jan 3rd week : Propagation of electromagnetic wave (Basic idea, no derivation), Poynting vector and Poynting theorem.

Jan 4th week : Revision of chapter electromagnetism .

Feb 1st week : : A.C. circuit analysis using complex variable with (a) Capacitance and Resistance (CR) (b) Resistance and Inductance (LR) (c) Capacitance and Inductance (LC) (D) Capacitance, Inductance (LR) (c) Capacitance and Inductance (LC)

Feb 2nd week : (d) Capacitance, Inductance and Resistance (LCR), Series and parallel resonance circuit, Quality factor (sharpness of resonance).

Feb 3rd week : Revision of chapter A.C. Analysis.

Lesson plan for the session (2020-21)

Odd semester B.Sc 2nd

3rd sem

Paper - Wave & Optics , PH – 302

Nov 1st week : Interference by Division of Wave front: Young's double slit experiment, Coherence, Conditions of interference,

Nov 2nd week : Fresnel's biprism and its applications to determination of wavelength of sodium light and thickness of a mica sheet, Lloyd's mirror, Difference between Bi-prism and Llyod mirror fringes, phase change on reflection.

Nov 3rd t week : Interference by Division of Amplitude: Thin film, Plane parallel film , production of colours in their films, classification of fringes in films.

Nov 4th week : Interference due to transmitted light, wedge shaped film, Newton's rings , Interferometers: Michelson's interferometer and its applications to (i) Standardization of a meter (ii) determination of wavelength.

Dec 1st week : Revision of chapter interference , Huygen's-Fresnel's theory, Fresnel's assumptions, & half-period zones

Dec 2nd week : rectilinear propagation of light , zone plate.

Dec 3rd week : Diffraction at a straight edge, rectangular slit and diffraction at a circular aperture, Diffraction due to a narrow slit and diffraction due to a narrow wire

Dec 4th week : Revision of chapter Diffraction .

January 1st week : Fraunhoffer diffraction: one-slit diffraction, two slit diffraction, N-slit diffraction , plane transmission grating spectrum , dispersive power of a grating .

Jan 2nd week : limit of resolution, Rayleigh's criterion,

Jan 3rd week : resolving power of telescope and a grating difference between prism and grating spectra .

Jan 4th week : Revision of chapter Diffraction .

FEB 1ST week : Assignment checked

Feb 2nd week : Revision

Feb 3rd week : Tests.

Lesson plan for the session (2020-21)

Odd semester B.Sc 3rd

5th sem

Paper : Nuclear physics PH- 502

Nov 1st week : Nuclear composition (p-e and p-n hypotheses), Nuclear properties; Nuclear size, spin, parity, statistics, magnetic dipole moment, quadruple moment (shape concept). Determination of mass by Bain-Bridge

Nov 2nd week : Bain-Bridge and Jordan mass spectrograph. Determination of charge by Mosley Law. Determination of size of nuclei by Rutherford Back Scattering. mass and binding energy, systematic of nuclear binding energy, nuclear stability

Nov 3rd week : Alpha-disintegration and its theory. Energetics of alpha-decay, Origin of continuous beta spectrum (neutrino hypothesis), types of beta-decay and energetics of beta-decay. Nature of gamma rays, Energetics of gamma rays.

Nov 4th week : Interaction of heavy charged particles (Alpha particles); Energy loss of heavy charged particle (idea of Bethe formula, no derivation), Range and straggling of alpha particles. Geiger-Nuttal law. Interaction of light charged particle

Dec 1st week : Energy loss of beta-particles (ionization), Range of electrons, absorption of beta-particles. Interaction of Gamma Ray; Passage of Gamma radiations through matter (Photoelectric,

Dec 2nd week : Compton and pair production effect) electron-positron annihilation. Absorption of Gamma rays (Mass attenuation coefficient) and its application.

Dec 3rd week : Revision of chapter Nuclear Radiation Decay processes , Linear accelerator, Tendem accelerator

Dec 4th week : Cyclotron and Betatron accelerators , Gas filled counters; Ionization chamber, proportional counter

Jan 1st week : G.M. Counter , Scintillation counter and semiconductor detector.

Jan 2nd week : Nuclear reactions, Elastic scattering, Inelastic scattering,

Jan 3rd week : Nuclear disintegration, Photonuclear reaction, Radiative capture, Direct reaction, Heavy ion reactions

Jan 4th week : spallation Reactions. Conservation laws, Q-value and reaction threshold.

Feb 1st week : Nuclear Reactors, General aspects of Reactor Design

Feb 2nd week : Nuclear fission and fusion reactors

Feb 3rd week : Revision & Assignments.

Lesson plan for the session (2020-21)

Even semester B.Sc 1st

2nd sem

Paper : Electronics devices PH- 202

April 4th week : Semiconductors : Energy bands in solids, Intrinsic and extrinsic semiconductors, carrier mobility and electrical resistivity of semiconductors, Hall effect, p-n junction diode and their characteristics, Zener and Avalanche breakdown

May 1st week : Zener diode, Zener diode as a voltage regulator. Light emitting diodes (LED), Photoconduction in semiconductors, Photodiode, Solar Cell, p-n junction as a rectifier, half wave and full wave rectifiers (with derivation), filters (series inductor, shunt capacitance, L-section or choke, π and R.C. filter circuits).

May 2nd week : : Transistors : Junction transistors, Working of NPN and PNP transistors, Three configurations of transistor (C-B, C-E, C-C modes),Common base, common emitter and common collector characteristics of transistor,

May 3rd week : Constants of a transistor and their relation, Advantages and disadvantages of C-E configuration. D.C. load line .Transistor biasing; various methods of transistor biasing and stabilization.

May 4th week : Transistor Amplifiers : Amplifiers, Classification of amplifiers, common base and common emitter amplifiers, coupling of amplifiers, various methods of coupling,

June 1st week : Resistance- Capacitance (RC) coupled amplifier (two stage, concept of band width, no derivation), Feedback in amplifiers, advantages of negative feedback, emitter follower, distortion in amplifiers.

June 2nd week : Oscillators Oscillators, Principle of oscillation, classification of oscillators, Condition for self sustained oscillation: Barkhausen criterion for oscillationJune

June 3rd week : , Tuned collector common emitter oscillator, Hartley oscillator, C.R.O. (Principle and Working).

June 4th week : Revision Tests & Assignment checking Assesment etc.

Lesson plan for the session (2020-21)

Even semester B.Sc 2nd year

4th sem

Paper : wave & optics PH- 402

April 4th week : **Polarization**

Polarization and Double refraction, Polarisation by reflection, Polarisation by scattering, Malus Law, Phenomenon of double refraction, Huygen's wave theory of double refraction (Normal and oblique incidence)

May 1st week : Analysis of polarized Light. Nicol prism, Quarter wave plate and half wave plate, production and detection of (i) Plane polarized light (ii) Circularly polarized light and (iii) Elliptically polarized light. Optical activity, Fresnel's theory of rotation, Specific rotation, Polarimeters (half shade and Biquartz).

May 2nd week : **Fourier analysis**

Fourier series, Fourier coefficients, odd functions, even functions, Fourier theorem, analysis of complex waves and its application for the solution of triangular and rectangular waves , half and full wave rectifier outputs.

May 3rd week : **Fourier transforms** :

Fourier transforms and its properties, Application of Fourier transform to following functions:

1. F(x)=v*x2 /2
   1 x<a
2. f(x)=
   0 x>a

May 4th week : **Geometrical Optics** :

Matrix methods in paraxial optics, effects of translation and refraction, derivation of thin lens and thick lens formulae, unit plane, nodal planes, system of thin lenses.

June 1st week : **Geometrical Optics II**

Chromatic, spherical, coma, astigmatism and distortion and aberrations and their remedies.

June 2nd week : **Fiber Optics**

Optical fiber, Critical angle of propagation, Mode of Propagation, Acceptance angle, Fractional refractive index change, Numerical aperture.

June 3rd week : Types of optics fiber, Normalized frequency, Pulse dispersion, Attenuation, Applications, Fiber optic Communication, Advantages.

June 4th week : : Revision Tests & Assignment checking Assesment etc.

Lesson plan for the session (2020-21)

Even semester B.Sc 3rd

6th sem

Paper : Atomic and molecular spectroscopy PH- 602

April 4th week : Knowledge of quantum nos , Hydrogen spectra in detail Frank hertz experiment ,Bohr's correspondence principal , alkali spectra , main feature of alkali spectra

May 1st week : vector atom model , salient feature of vector atom model , spin orbital interaction energy, double term separation method ,

May 2nd week : fine structure of alkali spectra etc. , coupling in case a more than one valence electron atom .

May 3rd week : LS coupling in detail , interaction energy in LS coupling , JJ coupling interaction energy J-J coupling

May 4th week : Lermor's theorem , Pauli Exclusion Principal ,symmetric & anti- symmetric , wave function , normal Zeeman effect , anomalous Zeeman effect

June 1st week : State effect (atoms in external electric field) , Paschen – back effect, Hyperfine structure

June 2nd week: Molecular physics ,infra red rotational & vibrational spectra and their energy level .

June 3rd week: Raman effect & its application & checking of assignment

June 4th week : Revision , Assignment , Tests & Checking of test etc.

Lesson plan for the session (2020-21)

Odd semester B.Sc 1st

1st sem (Nov 20 – Feb 21)

Paper - Electricity & magnetism , PH – 102

November 1st week : Gradient of a scalar and its physical significance, Line, Surface and Volume integrals of a vector and their physical significance,

Nov 2nd week : Flux of a vector field, Divergence and curl of a vector and their physical significance,

Nov 3rd week : Gauss's divergence theorem, Stoke's theorem , Derivation of electric field E from potential as gradient.

Nov 4th week :, Derivation of Laplace and Poisson equations, Electric flux, Gauss's Law, Mechanical force of charged surface, Energy per unit volume.

Dec 1st week : : Magnetic induction, Magnetic flux, Solenoidal nature of vector field of induction, properties of (i)del . B=0 , (ii) del.B =mu J

Dec 2nd week : , Electronic theory of dia and paramagnetism, Domain theory of ferromagnetism (Langevin's theory)

Dec 3rd week : , Cycle of magnetization- hystresis loop (Energy dissipation, Hystresis loss and importance of Hystresis Curve)

Dec 4th week : Revision of chapter magnetism & class test

Jan 1st week : : Maxwell equations and their derivations, Displacement current, Vector and Scalar potentials,

Jan 2nd week : Boundary conditions at interface between two different media

Jan 3rd week : Propagation of electromagnetic wave (Basic idea, no derivation), Poynting vector and Poynting theorem.

Jan 4th week : Revision of chapter electromagnetism .

Feb 1st week : : A.C. circuit analysis using complex variable with (a) Capacitance and Resistance (CR) (b) Resistance and Inductance (LR) (c) Capacitance and Inductance (LC) (D) Capacitance, Inductance (LR) (c) Capacitance and Inductance (LC)

Feb 2nd week : (d) Capacitance, Inductance and Resistance (LCR), Series and parallel resonance circuit, Quality factor (sharpness of resonance).

Feb 3rd week : Revision of chapter A.C. Analysis.

Lesson plan for the session (2020-21)

Odd semester B.Sc 2nd

3rd sem

Paper - Wave & Optics , PH – 302

Nov 1st week : Interference by Division of Wave front: Young's double slit experiment, Coherence, Conditions of interference,

Nov 2nd week : Fresnel's biprism and its applications to determination of wavelength of sodium light and thickness of a mica sheet, Lloyd's mirror, Difference between Bi-prism and Llyod mirror fringes, phase change on reflection.

Nov 3rd t week : Interference by Division of Amplitude: Thin film, Plane parallel film , production of colours in their films, classification of fringes in films.

Nov 4th week : Interference due to transmitted light, wedge shaped film, Newton's rings , Interferometers: Michelson's interferometer and its applications to (i) Standardization of a meter (ii) determination of wavelength.

Dec 1st week : Revision of chapter interference , Huygen's-Fresnel's theory, Fresnel's assumptions, & half-period zones

Dec 2nd week : rectilinear propagation of light , zone plate.

Dec 3rd week : Diffraction at a straight edge, rectangular slit and diffraction at a circular aperture, Diffraction due to a narrow slit and diffraction due to a narrow wire

Dec 4th week : Revision of chapter Diffraction .

January 1st week : Fraunhoffer diffraction: one-slit diffraction, two slit diffraction, N-slit diffraction , plane transmission grating spectrum , dispersive power of a grating .

Jan 2nd week : limit of resolution, Rayleigh's criterion,

Jan 3rd week : resolving power of telescope and a grating difference between prism and grating spectra .

Jan 4th week : Revision of chapter Diffraction .

FEB 1ST week : Assignment checked

Feb 2nd week : Revision

Feb 3rd week : Tests.

Lesson plan for the session (2020-21)

Odd semester B.Sc 3rd

5th sem

Paper : Nuclear physics PH- 502

Nov 1st week : Nuclear composition (p-e and p-n hypotheses), Nuclear properties; Nuclear size, spin, parity, statistics, magnetic dipole moment, quadruple moment (shape concept). Determination of mass by Bain-Bridge

Nov 2nd week : Bain-Bridge and Jordan mass spectrograph. Determination of charge by Mosley Law. Determination of size of nuclei by Rutherford Back Scattering. mass and binding energy, systematic of nuclear binding energy, nuclear stability

Nov 3rd week : Alpha-disintegration and its theory. Energetics of alpha-decay, Origin of continuous beta spectrum (neutrino hypothesis), types of beta-decay and energetics of beta-decay. Nature of gamma rays, Energetics of gamma rays.

Nov 4th week : Interaction of heavy charged particles (Alpha particles); Energy loss of heavy charged particle (idea of Bethe formula, no derivation), Range and straggling of alpha particles. Geiger-Nuttal law. Interaction of light charged particle

Dec 1st week : Energy loss of beta-particles (ionization), Range of electrons, absorption of beta-particles. Interaction of Gamma Ray; Passage of Gamma radiations through matter (Photoelectric,

Dec 2nd week : Compton and pair production effect) electron-positron annihilation. Absorption of Gamma rays (Mass attenuation coefficient) and its application.

Dec 3rd week : Revision of chapter Nuclear Radiation Decay processes , Linear accelerator, Tendem accelerator

Dec 4th week : Cyclotron and Betatron accelerators , Gas filled counters; Ionization chamber, proportional counter

Jan 1st week : G.M. Counter , Scintillation counter and semiconductor detector.

Jan 2nd week : Nuclear reactions, Elastic scattering, Inelastic scattering,

Jan 3rd week : Nuclear disintegration, Photonuclear reaction, Radiative capture, Direct reaction, Heavy ion reactions

Jan 4th week : spallation Reactions. Conservation laws, Q-value and reaction threshold.

Feb 1st week : Nuclear Reactors, General aspects of Reactor Design

Feb 2nd week : Nuclear fission and fusion reactors

Feb 3rd week : Revision & Assignments.

ZOOLOGY PAPER -2

(Life & diversity from coelenterata to Helminthes & Cell Biology II)

CLASS-B.SC I(1ST SEMESTER)

PLANNER

SESSION -2020-21

November :Week 3: chromosomes

November: Week 4:Cancer Biology

december: Week 1: cell cycle + Nucleus

decenmber: Week2: Nucleus continued + phylum coelenterata

December: Week 3: Obelia

December: Week 4: Obelia + polymorphism

january :Week 1: Helminthes : characters & classification + revision & test

January : Week 2: Fasciola hepatica

January: Week 3: Fasciola hepatica continued + test

January :Week4: parasitic Helminthes

february:Week 1:Cellular basis of immunity

february: Week 2: immunity continued

February: week 3: coral reefs

ZOOLOGYY PAPER -2

(Mammalian Physiology I)

CLASS-B.SC 2(3rd SEMESTER)

PLANNER

SESSION -2020-21

November :Week 3: Introduction to Biochemistry

November: Week 4: Proteins

december: Week 1: Carbohydrates

december: Week2: Carbohydrates continued + test

December: Week 3: lipids

December: Week 4: lipids continued + test

january :Week 1: Enzymes

January : Week 2: Enzymes continued

January: Week 3: Buffering action & buffer system

January :Week4: Nutrition

february:Week 1: nutrition continued + test

february: Week 2: muscles

February: week 3: Bones + test

ZOOLOGY PAPER -2

(Evolution & developmental biology)

CLASS-B.SC III(5th SEMESTER)

PLANNER

SESSION -2020-21

November :Week 3: Origin of life + Historical Background of development biology

November: Week 4:Concept of species

december: Week 1: Human evolution + Micro , macro & mega evolution

decenmber: Week2: gametogenesis & gametes + test

December: Week 3: theories of organic evolution

December: Week 4: evidences of organic evolution

january :Week 1: development of frog + test

January : Week 2: development of chick

January: Week 3: cleavage & blastulation

January :Week4: repair & regeneration + test

february:Week 1:extra embryonic membranes

february: Week 2: primary organizers

February: week 3: competence , determination & differentiation + test

Classical Mechanics & Theory of Relativity (Physics-PH-101) Paper-I

Class – B. Sc. 1st year (1st Semester)

Planner- Odd Semester

Session 2020-21

Week 1 Mechanics of a single particle and system of particles (3L)

Week 2 Centre of mass concept**,** Conservation laws (3L)

Week 3 Constrained motion, Generalised co-ordinates (3L)

Week 4 Hamilton's variational Principle, Lagrange's equation of motion, Lagrange's eqn for Linear harmonic oscillator (3L)

Week 5 Lagrange's eqn for simple pendulum and Atwood's machine (3L)

Week 6 Theory of relativity- Frame of reference, Inertial and non-inertial frames of reference (3L)

Week 7 Galilean transformations, Limitations of Newton's laws of motion (3L)

Week 8 Transformation equations for inclined frame of reference and rotating frame of reference (3L)

Week 9 Accelerated frame of Reference and rotating frame, Centrifugal and Coriolis force (3L)

Week 10 Michelson-Morley Experiment, Special theory of relativity, Lorentz transformations (3L)

Week 11 Length contraction, time dilation, twin paradox, velocity addition (3L)

Week 12 Mass energy equivalence, Momentum and energy (3L)

Week 13 zero rest mass, Class tests (3L)

Week 14 Revision & discussion of problems (3L)

Week 15 Revision & discussion of exam pattern (3L)

Computer Programming & Thermodynamics (Physics PH-301) Paper – I

Class – B. Sc. 2nd year (3rd Semester)

Planner – Odd Semester

Session 2020-21

Week 1 Bridge Course: Basics of Thermodynamics (3L)

Week 2 Bridge Course: Basics of computer programming (3L)

Week 3 Computer Organization, Binary Representation, Algorithm development (3L)

Week 4 Flowchart, Fortran preliminaries (3L)

Week 5 IF, DO, GOTO Statements, Dimension, Array (3L)

Week 6 Statement function, Function subprogram, Program writing, algorithm development and flowchart of even odd no, Roots of quadratic equation (3L)

Week 7 Ascending-descending order, Mean & Standard deviation, least square curve fitting (3L)

Week 8 Product of matrices, Trapezoidal & Simpson's 1/3rd rule (3L)

Week 9 Thermodynamics system and laws of thermodynamics, Carnot cycle, carnot theorem, (3L)

Week 10 Kelvin scale, Joule Thomson Effect (3L)

Week 11 Entropy (3L)

Week 12 Liquefication of gases (3L)

Week 13 Clausius-Clapeyron Latent heat equations, Tripple point (3L)

Week 14 Thermodynamical Functions and Thermodynamical potentials (3L)

Week 15: Applications of Maxwell's Relations, Revision & discussion of problems, discussion of exam pattern (3L)

Quantum and Laser Physics (Physics-PH-501) Paper – I

Class – B. Sc. 3rd year (5th Semester)

Planner – Odd Semester

Session 2020-21

Week 1 Bridge Course: Basics of Quantum mechanics (3L)

Week 2 Bridge Course continued (3L)

Week 3 Classical vs Quantum Physics, Photoelectric Effect (3L)

Week 4 Compton Effect, Frank Hertz Exp., De-Broglie Hypothesis (3L)

Week 5 Davisson Germetr & G.P. Thomson Exp., Phase Velocity & Group Velocity (3L)

Week 6 Uncertainty Principle, Experimental details and applications (3L)

Week 7 Schrodinger wave equation, Normalization, Expectation value (3L)

Week 8 Applications of Schrodinger wave equation: Free particle in 1-dimensional box, 1-dimensional potential Step (for E > V & E < V) (3L)

Week 9 One-dimensional Potential barrier (for E > V & E < V) (3L)

Week 10 Harmonic Oscillator (3L)

Week 11 Laser Physics – I: Absorption and Emission of radiation, main features of Laser (3L)

Week 12 Einstein's coefficients, Momentum transfer (3L)

Week 13 Laser pumping, Threshold condition, He-Ne Laser (3L)

Week 14 Ruby Laser, Semiconductor Laser, Applications of Laser (3L)

Week 15: Revision & Discussion of problems, discussion of exam pattern (3L)

ZOOLOGY PAPER -1

(Life & diversity from Protozoa to Porifera & cell biology I)

CLASS-B.SC I(1ST SEMESTER)

PLANNER

SESSION -2020-21

November :Week 3: Protozoans: characters, classification & examples

November: Week 4: plasmodium

december: Week 1: Parasitic protozoans

decenmber: Week2: Porifera : characters, classification & examples

December: Week 3: Sycon

December: Week 4: Sycon continued + revision

january :Week 1: Canal system & spicules in sponges

January : Week 2: cilia & flagella + centriole & basal body + revision & test

January: Week 3: microtubules & microfilaments + lysozyme

January :Week4: Ribosomes + Endoplasmic Reticulum

february:Week 1: Mitochondria

february: Week 2: golgi complex + Revision & test

February: week 3: plasma membrane

ZOOLOGY PAPER -1

(Life & diversity of chordates I)

CLASS-B.SC 2(3rd SEMESTER)

PLANNER

SESSION -2020-21

November :Week 3: introduction of chordates

November: Week 4: Protochordates : characters & classification & examples

december: Week 1: Urochordates & cephalochordates

december: Week2: Herdmania

December: Week 3: Herdmania continued + Revision & test

December: Week 4: Amphioxus

january :Week 1: Amphioxus continued

January : Week 2: Cyclostomata : characters & classification + Petromyzon

January: Week 3: Petromyzon continued

January :Week4:Pisces + Revision & test

february:Week 1:Labeo

february: Week 2:Labeo continued

February: week 3: Pisces in general + Revision & test

ZOOLOGY PAPER -1

(Environmental Biology)

CLASS-B.SC III(5th SEMESTER)

PLANNER

SESSION -2020-21

November : week 3: Basic concepts of ecology

November: Week 4: factors affecting environment

december: Week 1: ecosystem

decenmber: Week2: ecosystem continued

December: Week 3: biogeochemical cycles + revision & test

December: Week 4: population

january :Week 1: population continued

January : Week 2: migration & parental care + revision & test

January: Week 3: population interactions

January :Week4: population interactions continued

february:Week 1: environmental pollution

february: Week 2: concept of biodiversity + Revision & test

February: week 3: natural resources

Inorganic Chemistry 2020-21

Class-B.Sc III(5th Semester)(CH-301)

Planner DR.(MRS.)SUNITA PAHWA

Week 1:Bridge course: Basic introduction of metal ligand bonding, transition metal complexes and their electronic spectra.

Week 2: Metal-ligand bonding in transition metal complexes: VBT, CFT.

Week 3: Colour of transition metal complexes, limitations of CFT, comparison of CFT and VBT.

Week 4: Thermodynamic and kinetic aspect of metal complexes: introduction, thermodynamic stability of complex, kinetic stability, factors on which stability of complex depend.

Week 5:Substitution reaction in square planar complexes, rate law, trans effect.

Week 6: Mechanism of nucleophillic substitution , theories of trans effect.

Week 7: Magnetic properties of transition metal complexes: types, magnetic susceptibility, ferromagnetism and antiferromagnetism.

Week 8: Orbital contribution, temperature independent paramagnetism, anomalous magnetic moment.

Week 9: Electronic spectra of transition metal complexes, term symbols,LS - coupling .

Week 10: Rules for determining term symbols, spectroscopic ground state term, hole formalism.

Week 11: Calculation of ground state, microstate, electronic spectra.

Week 12: Splitting of tetrahedral and octahedral crystal fields, spectrochemical series, orgel diagram.

Principal (Offg.)
Arya Kanya Mahavidyalya
Shahabad Markanda

(Akwinder kaur)

(Odd Sem)

BASIC OF DESIGN & ILLUSTRATION(101)

CLASS- B.SC FASHION DESIGINING – I

Planner

Session 2021 -2022

October:week3 Elements of art and design

October:week4 Principles of design

November: week 1 Color, dimension of color

November: week 2 Hue, value, intensity

November: week 3 Diwali holidays

November: week 4 color schemes

December:week1 Introduction and brief history of fashion illustrations

December:week2 Fashion model drawing

December:week3 Fashion model drawing

December:week4 Optical illusions created through elements of art and principles of design

January: week1 Optical illusions created through elements of art and principles of design

January: week2 Elements of art and design(revision)

January: week3 basic human proportion, body figures

January:week 4 Introduction to art media and its application

February:week1 Design – definition and types

February:week2 shapes, sketching postures

February:week3 Dimension of color, hue, value, intensity

February:week4 Revision and tests

Principal (Offg.)
Arya Kanya Mahavidyalya
Shahabad Markanda

(Akwinder)

Knitting Technology (204)

CLASS- B.SC FASHION DESIGINING – II

Planner

Session 2021 -2022

October:week3 Terns used in knitting.

October:week4 Indian knitting industry – past

November: week 1 Indian knitting industry – present

November: week2 Indian knitting industry – future

November: week3 Diwali holidays

November: week 4 Knitting needle

December:week1 Hand knitting

December:week2 Machine knitting

December:week3 Knitted fabric defects.

December:week4 Comparison of warp and weft knitting

January: week1 Basic weft knit stitches

January: week2 Basic warp knit stitches

January: week3 Knitting machines

January:week 4 Introduction to knitting technology

February:week1 Difference between knits & woven

February:week2 Preparation of knitting samples- single jersey, rib

February:week3 Preparation of knitting samples purl & inter lock, float

February:week4 Revision and tests

Principal (Offg.)
Arya Kanya Mahavidyalya
Shahabad Markanda

(Akwinder kaur)

APPAREL MANUFACTURING TECHNOLOGIES(302)

CLASS- B.SC FASHION DESIGINING – III

Planner

Session 2021 -2022

October:week 3 Introduction to entrepreneurship development

October:week4 Work flow and brief study of various department of apparel manufacturing unit

November: week 1 Garment inspection using different methods

November: week2 Garment inspection using different methods

November: week3 Diwali holidays

November: week 4 Packaging

December:week1 Packaging

December:week2 Care labels, care labeling systems, Eco labeling

December:week3 Different types of Industrial sewing machines

December:week4 Special purpose machines

January: week1 Study of different department of an Apparel Manufacturing Unit

January: week2 Applying quality assurance programmes

January: week3 care labeling systems

January:week4 Introduction to quality control

February:week1 importance of quality assurance

February:week2 Eco labeling, Care labels

February:week3 Different department of an Apparel Manufacturing Unit

February:week3 Revision and test

Arya Kanya Mahavidyalaya
Shahabad Markanda

(Harjeet kaur)

(Odd sem.)

Basics of Sewing(102)

B.Sc. Fashion Designing –I

Planner

Session 2021 -2022

October:week3 Introduction to manufacture of Sewing threads and their properties& Plackets

October:week4 Sewing techniques& Fullness& Trimmings

November: week 1 Seams and seam finishes& Drafting

November: week2 Fullness& Yokes

November: week3 Diwali holidays

November: week 4 Yokes& Drafting of Child's Bodice block

December:week1 Sleeves & Collars& Construction of sleeves

December:week2 Different types of Pockets& Skirts

December:week3 Fastners & Finishes& Plackets

December:week4 Different types of trimmings& Terminology

January: week1 Figure analysis

January: week2 Anthropometric Measurements

January: week3 Methods of garment construction

January:week 4 Introduction to sewing – history of sewing machine& Construction of Collars

February:week1 Sewing machines & Basic hand stitches

February:week2 Different types of trimmings

February:week3 Different types of Skirts

February:week4 Fullness – darts, tucks, pleats, gathers – definition, terms, types

Principal (Offg.)
Arya Kanya Mahavidyalya
Shahabad Markanda

(Harjeet kaur)

Traditional Textiles(103)

Class- B.Sc FD(1st Sem)

Planner

Session-2020-2021

October: Week 3 History of Embroidered, hand woven, dyed, printed and painted textiles of India.

October: Week 4 Floor coverings – Carpets and Durries, Coloured Textiles

November: Week1 Bandhani, Patola, Ikat, Pocchampalli.

November: Week2 Woven Textile – Brocades, Jamavar, Jamdani,

November: Week3 Diwali Break

November: Week4 Chanderi, Maheshwari, Kanjivaram, Kota, Baluchari

December: Week1 Printed Textiles – Sanganeri, Painted Textiles – Kalamkari.

December: Week2 Shawls of Kashmir, Symbolic motifs of various cultures

December: Week 3 Study of Traditional Embroidery – History and types.

December: Week 4Traditional and Commercial embroideries of India

January: Week1 Phulkari, Kantha, Kasuti,

January: Week 2 Chamba Rumal, Chikankari, Kashida,

January: Week3 Zardozi with their traditional influence

January: Week4 symbolism, basic fabrics, decorative stitches,

January: Week3 techniques and colour combination.

February: week 1 Revision of unit 1

February : week 2 Revision of unit 2

February : week 3 Test of unit 1

February : week 4 Test of unit 2

...ya Kanya Mahavidyalaya
Shahabad Markanda

(Odd Sem)

(HimaniAgarwal)

Traditional Textiles(Pr.103)

Class- B.Sc FD(1st Sem)

Planner

Session-2020-2021

October: Week3Intro of textiles & Basic embroidery stitches

October: Week4 Illustrating the traditional motifs on an article

November: Week1 Dyeing of Cotton and Silk, Tie and Dye,

November: Week2 Fabric painting, Printing and various textured effects.

November: Week3 Diwali Break

November: Week4 Preparation of an article using different techniques of surface ornamentation

December: Week1 Preparation of second article

December: Week1 Kantha of Bengal

December: Week2 Cont. with last topic

December: Week3 Kashida of Kashmir

December: Week4 Phulkari of Punjab

January: Week1 Cont. with last topic

January: Week2Sindhi of Sind

January: Week3 Kutch of Gujarat

January: Week4 Tribal Traditional embroidery

February: Week1 Cont. with last topic

February: Week2 Chikankari of Uttar Pradesh

February: Week3 Kasuti of Karnataka

February: Week4 Printing & Painting

Principal (Offg.)
Arya Kanya Mahavidyalya
Shahabad Markanda

(Himani Agarwal)

Pattern Making (202)

Class- B.Sc FD(3rd Sem)

Planner

Session-2020-2021

October: Week 3Intro of Pattern Making, Measurements

October: Week 4 symbols used in pattern making

November: week 1 Terminology used in pattern making

November: week 2 Cont. with last topic

November: week 3 Diwali Break

November: Week4 Fitting – principles of good fit,
December: Week1 Cont. with last topic

December: Week2 Basics of commercial paper pattern.

December: Week 3 Pattern Envelope,

December: Week 4 Pattern Making, Pattern Layout

January: Week1 Fabric estimation and its important

January: Week 2 Cont. with last topic

January: Week 3 Patten making tools

January: Week 4 Cont. with last topic

February: Week 1 Style reading

February: Week2 revision of Unit 1

February: Week 3 Revision of unit 2

February: Week 4 test of unit 1&2

Principal (Offg.)
Arya Kanya Mahavidyalya
Shahabad Markanda

(Himani Agarwal)

HISTORY OF WORLD COSTUMES (301)

Class- B.Sc FD(5th Sem)

Planner

Session-2021-2022

October: Week 3 Intro. & Study of World Costume

October: Week 4 Babylonia

November: Week1 Assyria

November: Week2 Crete

November: Week3 Diwali Break

November: Week4 Egyptian

December: Week1 Greek

December: Week2 Roman

December: Week 3Byzantine

December: Week4 French- Middle Ages

January: Week1 Renaissance

January: Week2 French Revolution

January: Week3 Romantic Period

January: Week4 Presentation of Costumes of different periods

February: Week1 Cont. with last topic

February: Week2 Revision of unit 1 & 2

February: Week3 test of unit 1

February: Week4 test of unit 2

Principal (Offg.)
Arya Kanya Mahavidyalya
Shahabad Markanda

(Himani Agarwal)

PATTERN MAKING-III (304)

Class- B.Sc FD(5th Sem)

Planner

Session-2021-2022

October: Week 3 Preparation of basic blocks – children, men

October: Week 4 Preparation of basic blocks –women

November: Week 1 Developing patterns & Test fit

November: Week 2 Dart manipulation

November: Week 3 Diwali Break

November: Week 4 cont. with last topic

December: Week 1 Princess lines, Yokes

December: Week 2 Fullness (gather, pleats & tucks),

December: Week 3 cont. with last topic

December: Week 4 Contouring pattern (wrap, off shoulder, halter, and cowl)

January: Week1 cont. with last topic

January: Week 2 Draping of basic bodice block-Front and Back

January: Week 3 cont. with last topic

January: Week 4 Draping of top with princess line

February: Week1 Draping of Top with off shoulder design

February: Week 2 cont. with last topic

February: Week 3 Draping of Top with Halter

February: Week 4 cont. with last topic

Principal (Offg.)
Arya Kanya Mahavidyalya
Shahabad Markanda

PHYSICAL CHEMISTRY 2020-21

B.SC 1ST YEAR (1st semester)

Physical chemistry
(CH-102)

PLANNER
MS.POONAM

week 1stBRIDGE COURSE -basic introduction of liquid state ,forces polar ,and non polar

2nd week : intermolecular forces , vapour pressure, surface tension, structure of liquids , liquid crystals

3rd week :- viscosity, the molecule of water , refractive index , optical rotation. Revesion + test

4TH week : solid state introduction classification of crystals basic of nature of forces revision + test

5th week :- laws of crystallography, crystallographic axes and axial ratios crystal system, isomorphism and polymorphism

6th week : space lattice and unit cell, bravias lattice , space groups , x-ray diffraction .

7th week gaseous state introduction kinetic model of gas derivation of gas laws from the kinetic gas equation.

gth week collision diameter viscosity of gases reduction of vander walls equation to viral equation . October first week : BRIDGE

gth week - critical phenomena and critical constants and applications liquification of gases

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10th week :- laws of evaporation of energy molecular basic of specific heats .

11th week assignments + doubts + test and revision .

12th week revision via test

.

PHYSICAL CHEMISTRY 2020-21

B.sc 2nd year (3rd semester)

Physical chemistry (CH – 202)

PLANNER

BRIDGE COURSE - 1ST WEEK BASIC INTRODUCTION OF THERMODYNAMICS 1 HEAT AND THERMODYNAMICS TERMS.

2nd week :- objectives of thermodynamics , limitations of thermodynamics , relation between heat and work

3rd week – types of system intensive and extensive properties state and path functions , CONCEPT of heat

4th week : concept of work zeroth law of thermodynamics bond energy kirchoffs equations first law of thermodynamics , internal energy.

5th week :- enthalpy , heat capacity , heat capacity at constant v and p, joules law and joules Thomson coefficient for ideal gas and real gas bond energies and its applications

6th week - chemical equilibrium introduction equilibrium constant and free energy concept of chemical potential

7th week : thermodynamic derivation , temperature dependence of equilibrium constant, vant's hoff reaction isochore vant's hoff reaction isotherm

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gth week : le - chateilier principal and its applications clapeyron equation and clausius - clapeyron equation its applications + revesion and test.

gth week :- distribution law – introduction about phases , Nernst equation law its derivation

10th week :- modification of distribution law when solute undergoes dissociation, association and chemical combination .

11th week :- applications of distribution law determination of degree of hydrolysis and hydrolysis constant of aniline hydrochloride

12th week determination of equilibrium constant of ki3 complex

13th week :- revision + assignment + test.

PHYSICAL CHEMISRY 2020-21

B.SC 3RD YEAR (5TH SEMESTER)

PHYSICAL CHEMISTRY (CH-302)

PLANNER

1st week : BRIDGE COURSES : introduction of atoms etc and basics of quantum mechanics 1 black body radiations.

2nd week :- planks radiation law photoelectric effect heat capacity of solids compton effect wave function.

3rd week derivation of wave function and energy of particle in one dimension .

4TH WEEK :- INTRODUCTION TO PHYSICAL PROPERTIES AND MOLECULAR

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STRUCTURE optical activity polarization, dipole moment

5th week :- induce dipole moment , measurement of dipole moment =temperature method and refractivity method magnetic permeability magnetic susceptibility and its determination

6th week :-applications of magnetic susceptibility , magnetic properties : paramagnetism , diamagnetism and ferromagnetism revision + doubts

7th week :- SPECTROSCOPY :- Introduction - electromagnetic radiation, region of spectrum , basic features of spectroscopy, degree of freedom.

gth week :- rotational system :- diatomic molecule , energy levels of rigid rotors, selection rule , spectral intensity

gth week :- determination of bond length quantitative of non rigid rotor isotope effect vibration spectrum :- infrared spectrum, energy levels of simple harmonic oscillator, selection rules.

10th week : pure vibrational spectrum , intensity , determination of force constant and qualitative relation of force constant and bond energies .

11th week :- raman spectrum :- concept of polariziblity, pure rotational and pure vibrational raman spectra of diatomic molecules selection rules

12th week quantum theory of raman spectra + test + doubts

13th week :- revision + test + assignment

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INORGANIC CHEMISTRY(ODD SEMESTER)

CLASS-B.SC II(3RD SEMESTER)(CH-201)

PLANNER MS.POONAM

Week 1: Bridge course: Introduction to d-block elements, coordination compounds, non-aqueous solvents.

Week 2: Chemistry of d-block elements: introduction, definition, position of d-block, electronic configuration.

Week 3: Properties of d-block elements, properties of elements of first transition series.

Week 4: Comparison of properties of 3d elements with 4d and 5d, compounds of d-block elements, comparison of transition metals with non-transition metals.

Week 5: Coordinatin compounds: introduction, Werners theory, EAN, chelates.

Week 6: Nomenclature of coordination compounds, stereochemistry of different coordination numbers.

Week 7: Isomerism of coordination compounds, theories of bonding..

Week 8: Valence bond theory, inner and outer orbital complexes.

Week 9:Non aqueous solvents: introduction, physical properties of solvent.

Week 10: Types of solvents, types of reactions in non-aqueous solvents.

Week 11: Liquid ammonia as a non-aqueous solvent.

Week 12: Liquid sulphur dioxide as a non-aqueous solvent.

Week 13:Revision via test.

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