

Board of Intermediate Education, Andhra Pradesh.

Intermediate – II Year Syllabus w.e.f. 2013 – 14

Subject : MATHEMATICS – IIA

S. No.	Topics	Page No.
1.	<p>ALGEBRA Complex Numbers: 1.1 Complex number as an ordered pair of real numbers- fundamental operations 1.2 Representation of complex numbers in the form $a+ib$. 1.3 Modulus and amplitude of complex numbers Illustrations. 1.4 Geometrical and Polar Representation of complex numbers in Argand plane- Argand diagram.</p>	
2.	<p>De Moivre's Theorem: 2.1 De Moivre's theorem- Integral and Rational indices. 2.2 n^{th} roots of unity- Geometrical Interpretations – Illustrations.</p>	
3.	<p>Quadratic Expressions: 3.1 Quadratic expressions, equations in one variable 3.2 Sign of quadratic expressions – Change in signs – Maximum and minimum values 3.3 Quadratic in equations</p>	
4.	<p>Theory of Equations: 4.1 The relation between the roots and coefficients in an equation 4.2 Solving the equations when two or more roots of it are connected by certain relation 4.3 Equation with real coefficients, occurrence of complex roots in conjugate pairs and its Consequences 4.4 Transformation of equations – Reciprocal Equations.</p>	
5	<p>Permutations and Combinations: Fundamental Principle of counting - linear and circular permutations Permutations of 'n' dissimilar things taken 'r' at a time. Permutations when repetitions allowed Circular permutations Permutations with constraint repetitions. Combinations-definitions and certain theorems</p>	
6.	<p>Binomial Theorem: Binomial theorem for positive integral index Binomial theorem for rational Index (without proof). Approximations using Binomial theorem</p>	
7.	<p>Partial fractions: Partial fractions of $f(x)/g(x)$ when $g(x)$ contains non – repeated linear factors. Partial fractions of $f(x)/g(x)$ when $g(x)$ contains repeated and/or non-repeated linear factors. Partial fractions of $f(x)/g(x)$ when $g(x)$ contains</p>	

	irreducible factors.		
8.	PROBABILITY MEASURES OF DISPERSION Range Mean deviation Variance and standard deviation of ungrouped/grouped data. Coefficient of variation and analysis of frequency distribution with equal means but different variances.		
9.	Probability Random experiments and events Classical definition of probability, Axiomatic approach and addition theorem of probability. 9.3 Independent and dependent events conditional probability- multiplication theorem and Bayee's theorem.		
10.	Random Variables and Probability Distributions: 10.1 Random Variables 10.2 Theoretical discrete distributions – Binomial and Poisson Distributions		
Topics deleted under 30% reduction of Syllabus due to COVID-19			
1.	Complex Numbers	1.2.8-> Square root of a Complex Number and related problems in solved problems and exercise 1(b)	
3.	Quadratic Expressions	3.3-> Quadratic inequations including exercise 3(c)	85 - 90
4.	Theory of Equations	4.4-> Transformation of Equations including exercise 4(d)	129 - 144
5.	Permutations & Combinations	Derivation of formula npr and ncr Theorems :5.2.1 and 5.6.1	154, 183
6.	Bi-nominal theorem	Full	
7.	Partial Functions	7.3.8 and including exercise 7(d)	274 - 275
8.	Measures of Dispersion	8.4-> Coefficient of variation and analysis of frequency distributions with equal means Solved problems 2,3,6 in 8.5 and problem No:3 in III in exercise 8(a)	296 - 304

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Subject : MATHEMATICS – IIB

S. No.	Topics	Page No.
1.	<p>COORDINATE GEOMETRY</p> <p>Circle :</p> <p>Equation of circle -standard form-centre and radius of a circle with a given line segment as diameter & equation of circle through three non collinear points - parametric equations of a circle.</p> <p>Position of a point in the plane of a circle – power of a point-definition of tangent-length of tangent</p> <p>Position of a straight line in the plane of a circle-conditions for a line to be tangent – chord joining two points on a circle – equation of the tangent at a point on the circle- point of contact-equation of normal.</p> <p>Chord of contact - pole and polar-conjugate points and conjugate lines - equation of chord with given middle point.</p> <p>Relative position of two circles- circles touching each other externally, internally common tangents –centers of similitude- equation of pair of tangents from an external point.</p>	
2.	<p>System of circles:</p> <p>Angle between two intersecting circles.</p> <p>Radical axis of two circles- properties- Common chord and common tangent of two circles – radical centre.</p> <p>Intersection of a line and a Circle.</p>	
3.	<p>Parabola:</p> <p>3.1 Conic sections –Parabola- equation of parabola in standard form-different forms of parabola- parametric equations.</p> <p>3.2 Equations of tangent and normal at a point on the parabola (Cartesian and parametric) - conditions for straight line to be a tangent.</p>	
4.	<p>Ellipse:</p> <p>4.1 Equation of ellipse in standard form- Parametric equations.</p>	

	4.2 Equation of tangent and normal at a point on the ellipse (Cartesian and parametric)- condition for a straight line to be a tangent.	
5	Hyperbola: 5.1 Equation of hyperbola in standard form- Parametric equations. 5.2 Equations of tangent and normal at a point on the hyperbola (Cartesian and parametric)- conditions for a straight line to be a tangent- Asymptotes.	
6.	CALCULUS Integration : 6.1 Integration as the inverse process of differentiation- Standard forms – properties of integrals. 6.2 Method of substitution- integration of Algebraic, exponential, logarithmic, trigonometric and inverse trigonometric functions. Integration by parts. Integration- Partial fractions method. Reduction formulae.	
7.	Definite Integrals: Definite Integral as the limit of sum Interpretation of Definite Integral as an area. Fundamental theorem of Integral Calculus. Properties. Reduction formulae. Application of Definite integral to areas.	
8.	Differential equations: Formation of differential equation-Degree and order of an ordinary differential equation. Solving differential equation by a) Variables separable method. b) Homogeneous differential equation. c) Non - Homogeneous differential equation. Linear differential equations.	
Topics deleted under 30% reduction of Syllabus due to COVID-19		
1.	Circles	1.5-> Relative positions of two circles including Ex 1(e) and solved problems
3.	Parabola	3.2-> Tangents & Normal including Ex 3(b)
4.	Ellipse	4.2-> Equations of tangents & Normal including Ex 4(b)
		60 - 70
		117 -128
		148 – 158

6.	Intergation	Evaluation of	
7.	Definite Integrals	7.1 and 7.2 -> Definite integral as the limit of the sum and limit of the sum and related problems in exercise 7(a) and 7(b) and Examples 7.6-> Application of Definite integrals to areas including ex 7(d)	262 – 268 283 – 286 297 - 308
8.	Differential Equations	8.17-> Formation of Differential Equations and problems related to it 8.2(C): Non – Homogeneous Differential Equations including Ex 8(d) Solution of linear differential Equations of the type $dx+Px=Q$, Where P and Q	317 341 - 345

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Subject : BOTANY – II

S. No.	Topics	Page No.
1.	<p>Transport in Plants Means of Transport- Diffusion, Facilitated Diffusion, Passive symports and antiports, Active Transport, Comparison of Different Transport Processes, Plant-Water Relations- Water Potential, Osmosis, Plasmolysis, Imbibition, Long Distance Transport of Water- Water Movement up a Plant, Root Pressure, Transpiration pull, Transpiration- Opening and Closing of Stomata, Transpiration and Photosynthesis, Uptake and Transport of Mineral Nutrients- Uptake of Mineral Ions, Translocation of Mineral Ions, Phloem Transport: Flow from Source to Sink-The Pressure Flow or Mass Flow Hypothesis</p>	
2.	<p>Mineral Nutrition Methods to Study the Mineral Requirements of Plants, Essential Mineral Elements-Criteria for Essentiality, Macronutrients, Micronutrients, Role of Macro- and Micro- nutrients, Deficiency Symptoms of Essential Elements, Toxicity of Micronutrients, Mechanism of Absorption of Elements, Translocation of Solutes, Soil as Reservoir of Essential Elements, Metabolism of Nitrogen-Nitrogen Cycle, Biological Nitrogen Fixation, Symbiotic nitrogen fixation, Nodule Formation</p>	
3.	<p>Enzymes Chemical Reactions, Enzymatic Conversions, Nature of Enzyme Action, Factors Affecting Enzyme Activity, Temperature and pH, Concentration of Substrate, Classification and Nomenclature of Enzymes, Co-factors</p>	
4.	<p>Photosynthesis in Higher Plants Early Experiments, Site of Photosynthesis, Pigments Involved in Photosynthesis, Light Reaction, The Electron Transport- Splitting of Water, Cyclic and Non- cyclic Photo-phosphorylation, Chemiosmotic Hypothesis, Biosynthetic phase- The Primary Acceptor of CO₂, The Calvin Cycle, The C₄ Pathway, Photorespiration, Factors affecting Photosynthesis</p>	
5.	<p>Respiration of Plants Cellular respiration, Glycolysis, Fermentation, Aerobic Respiration- Tricarboxylic Acid Cycle, Electron Transport System (ETS) and Oxidative Phosphorylation, The Respiratory Balance Sheet, Amphibolic Pathway, Respiratory Quotient</p>	
6.	<p>Plant Growth and Development Growth- Plant Growth, Phases of Growth, Growth Rates, Conditions for Growth, Differentiation, Dedifferentiation and Redifferentiation, Development, Plant Growth Regulators- Physiological Effects of Plant Growth Regulators, <i>Auxins, Gibberellins, Cytokinins, Ethylene, Abscisic acid</i>, Seed Dormancy, Photoperiodism, Vernalisation</p>	

UNIT II	Microbiology	
7.	Bacteria Morphology of Bacteria, Bacterial cell structure- Nutrition, Reproduction- Sexual Reproduction, Conjugation, Transformation, Transduction, The importance of Bacteria to Humans	
8.	Viruses Discovery, Classification of Viruses, structure of Viruses, Multiplication of Bacteriophages- The Lysogenic Cycle, Viral diseases in Plants, Viral diseases in Humans	
Unit-III	Genetics	
9.	Principles of Inheritance and Variation Mendel's Experiments, Inheritance of one gene (Monohybrid Cross)- Back cross and Test cross, Law of Dominance, Law of Segregation or Law of purity of gametes, Deviations from Mendelian concept of dominance- Incomplete Dominance, Co-dominance, Explanation of the concept of dominance, Inheritance of two genes- Law of Independent Assortment, Chromosomal Theory of Inheritance, Linkage and Recombination, Mutations- Significance of mutations.	
Unit-IV	Molecular Biology	
10.	Molecular Basis of inheritance The DNA- Structure of Polynucleotide Chain, Packaging of DNA Helix, The Search for Genetic Material, Transforming Principle, Biochemical Characterisation of Transforming Principle, The Genetic Material is DNA, Properties of Genetic Material (DNA versus RNA), RNA World, Replication- The Experimental Proof, The Machinery and the Enzymes, Transcription- Transcription Unit, Transcription Unit and the Gene, Types of RNA and the process of Transcription, Genetic Code- Mutations and Genetic Code, tRNA– the Adapter Molecule, Translation, Regulation of Gene Expression- The <i>Lac</i> operon.	
UNIT V	Biotechnology	
11.	Principles and processes of Biotechnology Principles of Biotechnology- Construction of the first artificial recombinant DNA molecule, Tools of Recombinant DNA Technology- Restriction Enzymes, Cloning Vectors, Competent Host (For Transformation with Recombinant DNA), Processes of Recombinant DNA Technology- Isolation of the Genetic Material (DNA), Cutting of DNA at Specific Locations, Separation and isolation of DNA fragments, Insertion of isolated gene into a suitable vector, Amplification of Gene of Interest using PCR, Insertion of Recombinant DNA into the Host, Cell/Organism, Selection of Transformed host cells, Obtaining the Foreign Gene Product, Downstream Processing	
12.	Biotechnology and its applications Biotechnological Applications In Agriculture- Bt Cotton, Pest Resistant Plants, Other applications of Biotechnology Insulin, Gene therapy, Molecular Diagnosis, ELISA, DNA fingerprinting, Transgenic plants, Bio-safety and Ethical issues- Biopiracy	
UNIT VI	Plants, Microbes and Human welfare	
13	Strategies for enhancement in food production Plant Breeding- What is Plant Breeding?, Wheat and Rice, Sugarcane, Millets, Plant Breeding for Disease Resistance, Methods of breeding for	

	disease resistance, Mutation, Plant Breeding for Developing Resistance to Insect Pests, Plant Breeding for Improved Food Quality, Single Cell Protein (SCP), Tissue Culture	
14.	Microbes in Human Welfare Microbes in Household Products, Microbes in Industrial Products- Fermented Beverages, Antibiotics, Chemicals, Enzymes and other Bioactive Molecules, Microbes in Sewage Treatment, Primary treatment, Secondary treatment or Biological treatment, Microbes in Production of Biogas, Microbes as Biocontrol Agents, Biological control of pests and diseases, Microbes as Biofertilisers, Challenges posed by Microbes	
Topics deleted under 30% reduction of Syllabus due to COVID-19		
2	Mineral nutrition – Total chapter deleted	29 – 46
6	Plant growth & development . 6.1: Growth 6.2: Differentiation , De- differentiate and Re-differentiation 6.3: Development 6.5: Seed dormancy 6.6: Photo- periodism 6.7: Vernalisation	105 – 121
13	Strategies for enhancement on food production 13.1.2: Plant breeding for disease resistance 13.1.3: Plant breeding for developing resistance to insect pests 13.1.4: Plant breeding for improve feed Quality 13.2: Single cell Proteins (SCP)	247 249 250 250

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Subject : ZOOLOGY – II

S. No.	Topics	Page No.
UNIT-I	<p>Human Anatomy and Physiology-I</p> <p>Unit I A: Digestion and absorption</p> <p>Alimentary canal and digestive glands; Role of digestive enzymes and gastrointestinal hormones; Peristalsis, digestion, absorption and assimilation of proteins, carbohydrates and fats, egestion, Calorific value of proteins, carbohydrates and fats (for box item- not to be evaluated); Nutritional disorders: Protein Energy Malnutrition (PEM), indigestion, constipation, vomiting, jaundice, diarrhea, Kwashiorkor.</p> <p>Unit I B: Breathing and Respiration</p> <p>Respiratory organs in animals; Respiratory system in humans; Mechanism of breathing and its regulation in humans - Exchange of gases, transport of gases and regulation of respiration; Respiratory volumes; Respiratory disorders: Asthma, Emphysema, Occupational respiratory disorders – Asbestosis, Silicosis, Siderosis, Black Lung Disease in coal miners.</p>	
UNIT-II	<p>Human Anatomy and Physiology-II</p> <p>Unit II A: Body Fluids and Circulation</p> <p>Covered in I year composition of lymph and functions; Clotting of blood; Human circulatory system – structure of human heart and blood vessels; Cardiac cycle, cardiac output, double circulation; regulation of cardiac activity; Disorders of circulatory system: Hypertension, coronary artery disease, angina pectoris, heart failure.</p> <p>Unit II B: Excretory products and their elimination Modes of excretion – Ammonotelism, Urotelism, Uricotelism; Human excretory system – structure of kidney and nephron; Urine formation, osmoregulation; Regulation of kidney function –Renin-Angiotensin – Aldosterone system, Atrial Natriuretic Factor, ADH and diabetes insipidus; Role of other organs in excretion; Disorders: Uraemia, renal failure, renal calculi, nephritis, dialysis using artificial kidney.</p>	
UNIT III	<p>Human Anatomy and Physiology-III</p> <p>Unit IIIA: Muscular and Skeletal system</p> <p>Skeletal muscle – ultra structure; Contractile proteins & muscle contraction; Skeletal system and its functions; Joints. (to be dealt with relevance to practical syllabus); Disorders of the muscular and</p>	

	<p>skeletal system: myasthenia gravis, tetany, muscular dystrophy, arthritis, osteoporosis, gout, regormortis.</p> <p>Unit III B: Neural control and co-ordination</p> <p>Nervous system in human beings – Central nervous system, Peripheral nervous system and Visceral nervous system; Generation and conduction of nerve impulse; Reflex action; Sensory perception; Sense organs; Brief description of other receptors; Elementary structure and functioning of eye and ear.</p>	
UNIT IV	<p>Human Anatomy and Physiology-IV</p> <p>Unit IVA: Endocrine system and chemical co-ordination Endocrine glands and hormones; Human endocrine system – Hypothalamus, Pituitary, Pineal, Thyroid, Parathyroid, Adrenal, Pancreas, Gonads; Mechanism of hormone action (Elementary idea only); Role of hormones as messengers and regulators; Hypo and Hyper activity and related disorders: Common disorders –Dwarfism, acromegaly, cretinism, goiter, exophthalmic goiter, diabetes, Addison’s disease, Cushing’s syndrome.(Diseases & disorders to be dealt in brief).</p> <p>Unit IVB: Immune system</p> <p>Basic concepts of Immunology - Types of Immunity - Innate Immunity, Acquired Immunity, Active and Passive Immunity, Cell mediated Immunity and Humoral Immunity, Interferon, HIV and AIDS.</p>	
UNIT V	<p>Human Reproduction</p> <p>Unit VA: Human ReproductiveSystem</p> <p>Male and female reproductive systems; Microscopic anatomy of testis & ovary; Gametogenesis “ Spermatogenesis & Oogenesis; Menstrual cycle; Fertilization, Embryo development up to blastocyst formation, Implantation; Pregnancy, placenta formation, Parturition, Lactation (elementary idea).</p> <p>Unit VB: ReproductiveHealth</p> <p>Need for reproductive health and prevention of sexually transmitted diseases (STD); Birth control – Need and methods, contraception and medical termination of pregnancy (MTP); Amniocentesis; infertility and assisted reproductive technologies – IVF-ET, ZIFT, GIFT (elementary idea for general awareness).</p>	
UNIT VI	<p>Genetics</p> <p>Heredity and variation: Mendel’s laws of inheritance with reference to <i>Drosophila</i>. (<i>Drosophila melanogaster</i> Grey, Black body colour; Long, Vestigial wings), Pleiotropy; Multiple alleles: Inheritance of blood groups and Rh-factor; Co-dominance (Blood groups as example); Elementary idea of polygenic inheritance; Skin colour in humans (refer Sinnott, Dunn and</p>	

	Dobzhansky); Sex determination – in humans, birds, Fumea moth, genic balance theory of sex determination in <i>Drosophila melanogaster</i> and honey bees; Sex linked inheritance – Haemophilia, Colour blindness; Mendelian disorders in humans: Thalassaemia, Haemophilia, Sickle celled anaemia, cystiefibrosis PKU, Alkaptonuria; Chromosomal disorders – Down’s syndrome, Turner’s syndrome and Klinefelter syndrome; Genome, Human Genome Project and DNA Finger Printing,	
UNIT VII	Organic Evolution Origin of Life, Biological evolution and Evidences for biological evolution (palaeontological, comparative anatomical, embryological and molecular evidences); Theories of evolution: Lamarckism (in brief), Darwin’s theory of Evolution -Natural Selection with example (Kettlewell’s experiments on <i>Biston bitularia</i>), Mutation Theory of Hugo De Vries; Modern synthetic theory of Evolution - Hardy-Weinberg law ; Types of Natural Selection; Gene flow and genetic drift; Variations (mutations and genetic recombination); Adaptive radiation – viz., Darwin’s finches and adaptive radiation in marsupials; Human evolution; Speciation – Allopatric, sympatric; Reproductive isolation.	
Unit-VIII	AppliedBiology Apiculture; Animal Husbandry: Pisciculture, Poultry management, Dairy management; Animal breeding; Bio-medical Technology : Diagnostic Imaging (X-ray, CTscan, MRI), ECG, EEG; Application of Biotechnology in health: Human insulin and vaccine production ; Gene Therapy; Transgenic animals; ELISA; Vaccines, MABs, Cancer biology, stem cells.	
Topics deleted under 30% reduction of Syllabus due to COVID-19		
Unit –I	Human Anatomy and Physiology-I I A – Digestion and Absorption – Total chapter	2 - 20
Unit –III	III. Human Anatomy and Physiology	75 - 120
	III-A- Musculo Skeletal System 3.2- The Skeleton 3.3- Joints 3.4- Disoreders of Muscular and Skeletal system	84 - 90

	III-B- Neural control & Co- ordination 3.7- Reflex action and Reflex Arc. 3.8- Sensory Reception and Processing 3.8.1- The Eye 3.8.2- Mechanism of vision 3.8.3- The Ear (The stato- Aconstic Receptor) 3.8.4- Mechanism of Hearing only (Except disorders of Human Neural system)	110 - 117
Unit-VII	Evolution- Entire chapter deleted	235 - 262
Unit-VIII	8.1. Animal Husbandry 8.2. Poultry Farm management 8.3. Bee Keeping 8.4. Fishery management	264 – 274

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Subject : PHYSICS – II

S. No.	Topics	Page No.
1.	WAVES 1.1 INTRODUCTION 1.2 Transverse and longitudinal waves 1.3 Displacement relation in a progressive wave 1.4 The speed of a travelling wave 1.5 The principle of superposition of waves 1.6 Reflection of waves 1.7 Beats 1.8 Doppler effect	
2.	RAY OPTICS AND OPTICAL INSTRUMENTS 2.1 INTRODUCTION 2.2 Reflection of Light by Spherical Mirrors 2.3 Refraction 2.4 Total Internal Reflection 2.5 Refraction at Spherical Surfaces and by Lenses 2.6 Refraction through a Prism 2.7 Dispersion by a Prism 2.8 Some Natural Phenomena due to Sunlight 2.9 OPTICAL INSTRUMENTS	
3.	WAVE OPTICS 3.1 Introduction 3.2 Huygens Principle 3.3 Refraction and reflection of plane waves using Huygens Principle 3.4 Coherent and Incoherent Addition of Waves 3.5 Interference of Light Waves and Young's Experiment 3.6 Diffraction 3.7 Polarisation	
4.	ELECTRIC CHARGES AND FIELDS 4.1 INTRODUCTION 4.2 Electric Charges 4.3 Conductors and Insulators 4.4 Charging by Induction 4.5 Basic Properties of Electric Charge 4.6 Coulomb's Law 4.7 Forces between Multiple Charges 4.8 Electric Field 4.9 Electric Field Lines 4.10 Electric Flux 4.11 Electric Dipole 4.12 Dipole in a Uniform External Field 4.13 Continuous Charge Distribution 4.14 Gauss's Law 4.15 Application of Gauss's Law	

<p>5.</p>	<p>ELECTROSTATIC POTENTIAL AND CAPACITANCE</p> <p>5.1 INTRODUCTION</p> <p>5.2 Electrostatic Potential</p> <p>5.3 Potential due to a Point Charge</p> <p>5.4 Potential due to an Electric Dipole</p> <p>5.5 Potential due to a System of Charges</p> <p>5.6 Equipotential Surfaces</p> <p>5.7 Potential Energy of a System of Charges</p> <p>5.8 Potential Energy in an External Field</p> <p>5.9 Electrostatics of Conductors</p> <p>5.10 Dielectrics and Polarisation</p> <p>5.11 Capacitors and Capacitance</p> <p>5.12 The Parallel Plate Capacitor</p> <p>5.13 Effect of Dielectric on Capacitance</p> <p>5.14 Combination of Capacitors</p> <p>5.15 Energy Stored in a Capacitor</p> <p>5.16 Van de Graaff Generator</p>	
<p>6.</p>	<p>CURRENT ELECTRICITY</p> <p>6.1 INTRODUCTION</p> <p>6.2 Electric Current</p> <p>6.3 Electric Currents in Conductors</p> <p>6.4 Ohm's law</p> <p>6.5 Drift of Electrons and the Origin of Resistivity</p> <p>6.6 Limitations of Ohm's Law</p> <p>6.7 Resistivity of various Materials</p> <p>6.8 Temperature Dependence of Resistivity</p> <p>6.9 Electrical Energy, Power</p> <p>6.10 Combination of Resistors — Series and Parallel</p> <p>6.11 Cells, emf, Internal Resistance</p> <p>6.12 Cells in Series and in Parallel</p> <p>6.13 Kirchhoff's Laws</p> <p>6.14 Wheatstone Bridge</p> <p>6.15 Meter Bridge</p> <p>6.16 Potentiometer</p>	
<p>7.</p>	<p>MOVING CHARGES AND MAGNETISM</p> <p>7.1 INTRODUCTION</p> <p>7.2 Magnetic Force</p> <p>7.3 Motion in a Magnetic Field</p> <p>7.4 Motion in Combined Electric and Magnetic Fields</p> <p>7.5 Magnetic Field due to a Current Element, Biot-Savart Law</p> <p>7.6 Magnetic Field on the Axis of a Circular Current Loop</p> <p>7.7 Ampere's Circuital Law</p> <p>7.8 The Solenoid and the Toroid</p> <p>7.9 Force between Two Parallel Currents, the Ampere</p> <p>7.10 Torque on Current Loop, Magnetic Dipole</p> <p>7.11 The Moving Coil Galvanometer</p>	
<p>8.</p>	<p>MAGNETISM AND MATTER</p> <p>8.1 INTRODUCTION</p> <p>8.2 The Bar Magnet</p> <p>8.3 Magnetism and Gauss's Law</p> <p>8.4 The Earth's Magnetism</p>	

	8.5 Magnetisation and Magnetic Intensity 8.6 Magnetic Properties of Materials 8.7 Permanent Magnets and Electromagnets	
9.	ELECTROMAGNETIC INDUCTION 9.1 INTRODUCTION 9.2 The Experiments of Faraday and Henry 9.3 Magnetic Flux 9.4 Faraday's Law of Induction 9.5 Lenz's Law and Conservation of Energy 9.6 Motional Electromotive Force 9.7 Energy Consideration: A Quantitative Study 9.8 Eddy Currents 9.9 Inductance 9.10 AC Generator	
10.	ALTERNATING CURRENT 10.1 INTRODUCTION 10.2 AC Voltage Applied to a Resistor 10.3 Representation of AC Current and Voltage by Rotating Vectors — Phasors 10.4 AC Voltage Applied to an Inductor 10.5 AC Voltage Applied to a Capacitor 10.6 AC Voltage Applied to a Series LCR Circuit 10.7 Power in AC Circuit: The Power Factor 10.8 LC Oscillations 10.9 Transformers	
11.	ELECTROMAGNETIC WAVES 11.1 INTRODUCTION 11.2 Displacement Current 11.3 Electromagnetic Waves 11.4 Electromagnetic Spectrum	
12.	DUAL NATURE OF RADIATION AND MATTER 12.1 INTRODUCTION 12.2 Electron Emission 12.3 Photoelectric Effect 12.4 Experimental Study of Photoelectric Effect 12.5 Photoelectric Effect and Wave Theory of Light 12.6 Einstein's Photoelectric Equation: Energy Quantum of Radiation 12.7 Particle Nature of Light: The Photon 12.8 Wave Nature of Matter 12.9 Davisson and Germer Experiment	
13.	ATOMS 13.1 INTRODUCTION 13.2 Alpha-particle Scattering and Rutherford's Nuclear Model of Atom 13.3 Atomic Spectra 13.4 Bohr Model of the Hydrogen Atom 13.5 The Line Spectra of the Hydrogen Atom 13.6 DE Broglie's Explanation of Bohr's Second Postulate of Quantisation	
14.	NUCLEI 14.1 INTRODUCTION 14.2 Atomic Masses and Composition of Nucleus 14.3 Size of the Nucleus	

	14.4 Mass-Energy and Nuclear Binding Energy 14.5 Nuclear Force 14.6 Radioactivity 14.7 Nuclear Energy	
15.	SEMICONDUCTORELECTRONICS: MATERIALS,DEVICES AND SIMPLE CIRCUITS 15.1 INTRODUCTION 15.2 Classification of Metals, Conductors and Semiconductors 15.3 Intrinsic Semiconductor 15.4 Extrinsic Semiconductor 15.5 p-n Junction 15.6 Semiconductor diode 15.7 Application of Junction Diode as a Rectifier 15.8 Special Purpose p-n Junction Diodes 15.9 Junction Transistor 15.10 Digital Electronics and Logic Gates 15.11 Integrated Circuits	
16.	COMMUNICATION SYSTEMS 16.1 INTRODUCTION 16.2 Elements of a Communication System 16.3 Basic Terminology Used in Electronic Communication Systems 16.4 Bandwidth of Signals 16.5 Bandwidth of Transmission Medium 16.6 Propagation of Electromagnetic Waves 16.7 Modulation and its Necessity 16.8 Amplitude Modulation 16.9 Production of Amplitude Modulated Wave 16.10 Detection of Amplitude Modulated Wave	
Topics deleted under 30% reduction of Syllabus due to COVID-19		
1.	Waves - Doppler effected and its two situations	24 - 26
2.	Ray Optics and Optical Instruments - Reflection of light by spherical mirrors, the mirror equation. Scattering of light reddish appearance of the sun at sunrise and sunset and blue colors of sky.	40 – 45, 63 - 65
3.	Wave Optics – Diffraction: Resolving power of optical instruments (microscope and astronomical telescope) Polarisation: Polarisation of reflection (Brewster’s law) plane polarized light (uses) polaroids, polarization by scattering.	99 - 114
4.	Electric Charges and Fields - Application of Gauss’s law: Field due to uniformly charged thin spherical shell (field inside and outside)	155 - 163
6.	Current Electricity - Colour code for carbon resistors, series and parallel Combinations of resistors	229 - 331
7.	Moving charges and magnetism - Cyclofron	266 - 268
8.	Magnetism and matter - Magnetic field intensity due to a magnetic dipole (Bar magnet) along its axis and perpendicular to its axis (Bar magnet as an equivalent solenoid) , the dipole in a uniform magnet field Magnetic	321 - 327

	properties of materials (Para, dia and ferro) and its examples, permanent magnets and electromagnets.	
10.	Alternating Current -Power in AC circuit–The power factor, wattles current	392
11.	Electromagnetic waves - Displacement current	412
12.	Dual natural of Radiation and matter - Davisson and Germer experiment	449-450
14.	Nuclei - Radio activity (alpha, beta and gamma particles and their properties) Law of radio active decay, half life and mean life of a Radioactive material, Binding energy per nucleon and its variation with mass number.	496
15.	Semi conductor electronics: materials, devices and simple circuits Purpose of P-N junction diode 1. Zener diode and their characteristics 2. Zener diode as a voltage regulators.	530 – 538

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Subject : CHEMISTRY – II

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