BOARD OF INTERMEDIATE EDUCATION, TELANGANA., HYDERABAD
REVISION OF SYLLABUS – VOCATIONAL BRIDGE COURSE
SUBJECT- BOTANY- I (w.e.f. 2016-2017)

CHAPTERS	PERIODS
Unit-I DIVERSITY IN THE LIVING WORLD **CHAPTER-1 The living world** 1.1 Diversity in the living world 1.2 Taxonomic categories 1.3 Taxonomic aids	**04**
CHAPTER-2 Biological Classification 2.1 to 2.5 Five kingdom classification-Monera, Protista, Fungi, Plantae and Animalia 2.6 Three domains of life (six kingdom classification), Viruses 2.7 Viroids,Prions& Lichens	**05**
CHAPTER-3 Science of plants – Botany 3.1 Origin and Branches of Botany 3.2 Branches of Botany	**02**
CHAPTER-4 Plant Kingdom 4.1 Salient features, classification and alteration of generations of the plants of the following groups-Algae 4.2 Bryophytes 4.3 Pteridophytes 4.4 Gymnosperms 4.5 Angiosperms **Practicals:** Introduction about practical work, compound microscope, morphology of representative types of bacteria, fungi& different plant groups. Record work	**04**

UNIT-2 STRUCTURAL ORGANISATION IN PLANTSMORPHOLOGY **CHAPTER -5** **Morphology of flowering plants Vegetative Morphology:** 5.1 The root- Region of the root 5.1.2 Modifications of root 5.2 The structural modification of stem 5.3 The leaf-venation,types of leaves, phyllotaxy, modifications	**03**
Reproductive Morphology: 5.4 The inflorescence-Racemose, Cymose and special types (in brief) 5.5 Flower:Parts of a flower and their detailed description; Aestivation,Placentation 5.6 Fruits: Types-True, False and parthenocarpic fruits 5.7 Seeds **Practicals:** Modifications of Root, Stem, Leaf, Different types of Inflorescences –specimens study and Record work	**05**
UNIT-3 REPRODUCTION IN PLANTS **CHAPTER-6 Modes of Reproduction** 6.1 Reproduction and its types 6.2 Asexual reproduction-binary fission, Sporulation, budding, fragmentation, vegetative propagation in plants 6.3 Sexual reproduction in brief 6.4 An overview of angiosperm life cycle	**05**

CHAPTER-7	
SEXUAL REPRODUCTION IN FLOWERING PLANTS	**02**
7.1 Pollination	
7.2 Special modes-Apomixis, parthenocarpy, polyembryony	
Practicals: Reproductive parts of a flower. Record work	
UNIT-IV PLANT SYSTAMATICS	
CHAPTER-8 Taxonomy of Angiosperms	**05**
8.1 Systems, types of classification	
8.2 Semi technical description of a flowering plant	
8.3.1 Fabaceae	
8.3.2 Solanaceae	
8.3.3 Liliaceae	
UNIT-V CELL STRUCTURE AND FUNCTIONS	
Chapter-9 CELL: THE UNIT OF LIFE	
9.1 Prokaryotic cell	**01**
Practicals: Dissecting microscope,Plant taxonomy: Fabaceae, Solanaceae and Record work.	
Cell Organelles: (in brief)	
9.2 Eukaryotic cell-cell membrane, cell wall Endoplasmic reticulum, Lysosomes, Ribosomes, Vacuoles, Mitochondria, Plastids, Cytoskeleton and Nucleus. Chromosomes: structural organization	**03**
Practicals: Liliaceae, Preparation of herbarium sheets of flowering plants and Record work	

CHAPTER-11 Cell cycle and cell division 11.1 M. phase 11.2 Meiosis **Practicals:** Study of stages of meiosis using permanent slides, Record work	**03**

UNIT-VI INTERNAL ORGANISATION OF PLANTS

CHAPTER-12
HISTOLOGY AND ANATOMY OF FLOWERING PLANTS
 	
12.1   The tissues-Meristamatic tissues, Permanent tissues, Complex
         tissues
 	
12.2   Anatomy of Dicotyledonous & Monocotyledonous plants-
         Root,Stem, Leaf
 	
Practicals: Anatomy of stem and roots of monocots and dicots
                 Record work
	06

UNIT-VII   PLANT ECOLOGY

CHAPTER-13 **Ecological adaptation** 13.1 Introduction 13.2 Plant communities & Ecological adaptions: Hydrophytes Mesophytes and Xerophytes **Practicals:** Hydrophytes and Xerophytes specimens Record work	**02**

BOARD OF INTERMEDIATE EDUCATION, TELANGANA., HYDERABAD
REVISION OF SYLLABUS – VOCATIONAL BRIDGE COURSE
SUBJECT- ZOOLOGY- I (w.e.f. 2016-2017)

CHAPTERS	PERIODS
UNIT- I: ZOOLOGY – Diversity of Living World	**06**
1.1 What is life?	
1.2 Nature, Scope & meaning of zoology	
1.3 Branches of Zoology	
1.4 Basic principles of Classification: Biological system of classification- (Phylogenetic classification only)	
1.5 Levels or Hierarchy of classification	
1.6 Nomenclature – Bi & Trinominal	
1.7 Species concept	
1.8 Kingdom Animalia	
1.9 Biodiversity – Meaning and distribution (Genetic diversity, Species diversity, Ecosystem diversity(alpha,beta and gama), other attributes of biodiversity, role of biodiversity, threats to biodiveristy, methods of conservation, IUCN Red data books, Conservation of wild life in India – Legislation, Preservation, Organisations, Threatened species..	
Unit II: STRUCTURAL ORGANIZATION IN ANIMALS	**04**
2.1 Levels of organization, Multicellularity: Diploblastic & Triploblastic conditions	
2.2 Asymmetry,Symmetry: Radial symmetry, and Bilateral symmetry **(Brief account giving one example for each type from the representative phyla)**	
2.3 Acoelomates, Pseudocoelomates and Eucoelomates :- Schizo & Entero coelomates **(Brief account of formation of coelom)**	
2.4 Tissues: Epithelial, Connective, Muscular and Nervous tissues. (make it a little more elobarative)	
UNIT- III: **ANIMAL DIVERSITY - I: INVERTEBRATE PHYLA** **General Characters – Strictly restrict to 8 salient features only** **Classification up to Classes with two or three examples – Brief account only** 3.1 Porifera 3.2 Cnidaria	**07**

3.3	Platyhelminthes	
3.4	Nematoda	
3.5	Annelida (General Characters)	
3.6	Arthropoda	
3.7	Mollusca	
3.8	Echinodermata	
3.9	Hemichordata	

UNIT- IV:

ANIMAL DIVERSITY - I I: PHYLUM : CHORDATA — **04**

General Characters – Strictly restrict to 8 points only
Classification up to Classes - Brief account only with two or three examples

4.0	Phylum : Chordata
4.1	Sub phylum: Urochordata
4.2	Sub phylum: Cephalochordata
4.3	Sub phylum : Vertebrata
4.4	Super class: Agnatha
	4.4.1 Class Cyclostomata
4.5	Super class: Gnathostomata
	4.5.1 Super class pisces
	4.5.2 Class: Chondricthyes
	4.5.3 Class: Osteichthyes
4.6	Tetrapoda
	4.6.1 Class: Amphibia
	4.6.2 Class: Reptilia
	4.6.3 Class: Aves
	4.6.4 Class: Mammalia

UNIT- V: BIOLOGY & HUMAN WELFARE — **10**

(25 pages only)

5.1	Parasitism and parasitic adaptation
5.2	Health and disease: introduction (follow NCERT) Life cycle, Pathogenecity, Treatment & Prevention (Brief account only)
	1. *Entamoeba histolytica*
	2. *Plasmodium vivax*
	3. *Ascaris lumbricoides*
	4. *Wuchereria bancrofti*
5.3	Brief account of pathogenecity, treatment & prevention of Typhoid, Pneumonia, Common cold, & Ring worm.
5.4	Drugs and Alcohol absuse

UNIT- VI: Type study of Periplaneta americana		**08**
6.1	Habitat and habits	
6.2	External features	
6.3	Locomotion	
6.4	Digestive system	
6.5	Respiratory system	
6.6	Circulatory system	
6.7	Excretory system	
6.8	Nervous system – sense organs, structure of ommatidium.	
6.9	Reproductive system	
UNIT- VII: ECOLOGY & ENVIRONMENT		**11**
7.1	Organisms and Environment: Ecology, population, communities, habitat, niche, biome and ecosphere (definitions only)	
7.2	Ecosystem: Elementary aspects only Abiotic factors- Light, Temperature & Water (Biological effects only), Ecological adaptations	
7.3	Population interactions	
7.4	Ecosystems: Types, Components, Lake ecosystem	
7.5	Food chains, Food web, Productivity and Energy flow in Ecosystem, Ecological pyramids – Pyramids of numbers, biomass and energy.	
7.6	Nutritient cycling – Carbon, Nitrogen, & Phosphorous cycles (Brief account)	
7.7	Population attributes: Growth, Natality and Mortality, Age distribution, Population regulation.	
7.8	Environmental issues	
	TOTAL PERIODS	**50**

Guidelines to authors:

1. In addition you may include a few local examples for better under standing examples cited in NCERT text books for all topics.

2. Topics to be dealt on par with NCERT text books.

3. Vision of the topic to be included at the beginning to stimulate the thinking of the students.

4. **Very short, short, and long answer type of questions have to be given at the end of each chapter as model questions keeping the weightage in mind.**

5. For every unit a back ground of the pioneering scientists (preferably of Indian origin) and his contributions may be included at the beginning to motivate students This is additional information and to be marked as "Not for Evaluation".

6. Try to present the content in simple language and lucid style wherever the subject matter is to be written afresh.

7. Get the key words typed in bold.

8. Type all scientific names in italics.

9. Coloured 'corolla' diagrams are to be incorporated wherever necessary.

10. Glossary: write precisely, if necessary adopt the relevant terms from standard text books.
    Minimize the number. Do not exceed 3 sentences.

BOARD OF INTERMEDIATE EDUCATION, TELANGANA., HYDERABAD
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SUBJECT- PHYSICS- I (w.e.f. 2016-2017)

CHAPTERS	PERIODS
Chapter 1: **PHYSICAL WORLD** **1.1** What is physics? **1.2** Fundamental forces in nature	**01**
Chapter 2: **UNITS AND MEASUREMENTS** **2.1** Introduction **2.2** The international system of units **2.3** Accuracy, precision of instruments and errors in measurement **2.4** Significant figures **2.5** Dimensions of physical quantities **2.6** Dimensional formulae and dimensional equations	**10**
Chapter 3: **MOTION IN A STRAIGHT LINE** **3.1** Position, path length and displacement **3.2** Average velocity and average speed **3.3** Instantaneous velocity and speed **3.4** Acceleration **3.5** Kinematic equations for uniformly accelerated motion	**05**
Chapter 4: **MOTION IN A PLANE** **4.1** Scalars and vectors **4.2** Multiplication of vectors by real numbers **4.3** Addition and subtraction of vectors. graphical method **4.4** Resolution of vectors **4.5** Projectile motion **4.6** Uniform circular motion	**07**

Chapter 5: **LAWS OF MOTION** **5.1** The law of inertia **5.2** Newton's first law of motion **5.3** Newton's second law of motion **5.4** Newton's third law of motion **5.5** Conservation of momentum **5.6** Friction **5.6** Circular motion	**05**
Chapter 6: **WORK, ENERGY AND POWER** **6.1** Notions of work and kinetic energy : The work-energy theorem **6.2** Work **6.3** Kinetic energy **6.4** The concept of potential energy **6.5** The conservation of mechanical energy **6.6** The law of conservation of energy **6.7** Power **6.8** Collisions	**08**
Chapter 7: **SYSTEM OF PARTICLES AND ROTATIONAL MOTION** **7.1** Centre of mass, Centre of Gravity **7.2** Vector product of two vectors **7.3** Angular velocity and its relation with linear velocity. **7.4** Torque and angular momentum **7.5** Moment of inertia **7.6** Theorems of perpendicular and parallel axes	**10**
Chapter 8: **OSCILLATIONS** **8.1** Periodic and oscillatory motions **8.2** Simple harmonic motion **8.3** Velocity and acceleration in simple harmonic motion – time period, total energy. **8.4** Simple Pendulum – formula for the time period	**04**

Chapter 9: **GRAVITATION** **9.1** Kepler's laws **9.2** Universal law of gravitation **9.3** The gravitational constant **9.4** Acceleration due to gravity of the earth **9.5** Escape speed, orbital speed **9.6** Earth satellite **9.7** Geostationary and polar satellites **9.8** Weightlessness	**05**
Chapter 10: **Mechanical Properties of Solids** **10.1** Elastic behaviour of solids **10.2** Stress and strain **10.3** Hooke's law **10.4** Stress-strain curve **10.5** Elastic moduli - formula **10.6** Poisson' Ratio – formula	**03**
Chapter 11: **MECHANICAL PROPERTIES OF FLUIDS** **11.1** Pressure – Pascal Law **11.2** Streamline flow **11.3** Bernoulli's principle – formula and applications **11.4** Viscosity – concept and formula **11.5** Surface tension, angle of contact, Drops and Bubbles (formula) applications	**06**
Chapter 12: **THERMAL PROPERTIES OF MATTER** **12.1** Temperature and heat **12.2** Measurement of temperature **12.3** Ideal-gas equation and absolute temperature **12.4** Thermal expansion **12.5** Specific heat capacity **12.6** Calorimetry **12.7** Change of state **12.8** Heat transfer **12.9** Newton's law of cooling	**06**

Chapter 13: **THERMODYNAMICS** **13.1** Thermal equilibrium **13.2** Zeroth law of thermodynamics **13.3** Heat, internal energy and work **13.4** First law of thermodynamics **13.5** Specific heat capacity **13.6** Thermodynamic processes **13.7** Heat engines – qualitative treatment only **13.8** Refrigerators and heat pumps **13.9** Second law of thermodynamics **13.10** Carnot engine	**04**
Chapter 14: **KINETIC THEORY** **14.1** Introduction **14.2** Behaviour of gases **14.3** Kinetic theory of an ideal gas **14.4** Mean free path	**01**
TOTAL PERIODS	**69**

BOARD OF INTERMDIATE EDUCATION, TELANGANA., HYDERABAD
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SUBJECT- CHEMISTRY- I (w.e.f. 2016-2017)

CHAPTERS	PERIODS
Chapter 1: **ATOMIC STRUCTURE** 1.1　Sub- atomic particles 1.2　Bohr's model for Hydrogen atom. 　　1.2.1　Explanation of line spectrum of hydrogen. 　　1.2.2　Limitations of Bohr's model 1.3　Dual behaviour of matter. 　　1.3.1　Heisenberg's uncertainty principle. 1.4　 Orbitals and quantum numbers. 　　1.4.1 Shapes of atomic orbitals. 　　1.4.2 Energies of orbitals. 　　1.4.3 Filling of orbitals in atoms. Aufbau Principle, Pauli's exclusion 　　Principle and Hund's rule of maximum multiplicity. 1.5　Electronic configurations of atoms.	**10**
Chapter 2: **CLASSIFICATION OF ELEMENTSAND PERIODICITY IN PROPERTIES** 2.1　Modern periodic law and present form of the periodic table. 2.2　Electronic configuration and types of elements s,p,d.and f 　　blocks. 　　2.2.1　Trends in physical properties: 　　(a) Atomic radius 　　(b)Ionization enthalpy. 　　(c) Electron gain enthalpy 　　(d) Electro negativity. 2.3　Periodic trends in chemical properties: 　　(a) Diagonal relationship.	**10**
Chapter 3: **CHEMICAL BONDING AND MOLECULAR STRUCTURE** 3.1　Kossel – Lewis approach to chemical bonding. 3.2　Ionic or electrovalent bond - Factors favourable for the formation of ionic compounds.	**10**

3.3 Valence Shell Electron Pair Repulsion (VSEPR) theories. Predicting the geometry of simple molecules. 3.4 Factors favouring the formation of covalent bonds 3.5 Hybridisation- different types of hybridization involving s, p and d orbitals- shapes of simple covalent molecules. 3.6 Coordinate bond –definition with examples. 3.7 Molecular orbital theory – Energy level diagrams for molecular orbitals -Bonding in some homo nuclear diatomic molecules- H_2, He_2, Li_2, B_2, C_2, N_2, and O_2 3.8 Hydrogen bonding. Types of hydrogen bonds-inter and intra molecular.	
Chapter 4: **STATES OF MATTER: GASES AND LIQUIDS** 4.1 The Gas Laws 4.2 Ideal gas equation. 4.3 Graham's law of diffusion – Dalton's Law of partial pressures 4.4 Kinetic molecular theory of gases. 4.5 Distribution of molecular speeds – rms, average and most probable speeds-Kinetic energy of gas molecules. 4.6 Liquid State – Properties of Liquids in terms of Inter molecular interactions – Vapour pressure, Viscosity and Surface tension (Qualitative idea only. No mathematical derivation)	**08**
Chapter 5: **STOICHIOMETRY** 5.1 Atomic and molecular masses- mole concept and molar mass concept of equivalent weight. 5.2 Percentage composition of compounds and calculations of empirical and molecular formulae of compounds. 5.3 Methods of Expressing concentrations of solutions-mass percent normality. 5.4 Oxidation number concept. 5.5 Types of Redox reactions-combination, decomposition, displacement. and disproportionation reactions 5.6 Balancing of redox reactions –Half reaction (ion-electron) method.	**07**

Chapter 6: **THERMODYNAMICS**	**05**

6.1　The first law of Thermodynamics.
　　　6.1.1 Enthalpy, H- a useful new state function
　　　6.1.2 Extensive and intensive properties.
6.2　Enthalpy change, Δr H of reactions – reaction Enthalpy
　　　(a) Standard enthalpy of reactions.
　　　(b) Standard enthalpy of formation.
　　　(c) Hess's law of constant Heat summation.
6.3　Enthalpies for different types of reactions.
　　　(a) Standard enthalpy of combustion (Δc H^O)
　　　(b) Bond Enthalpy
　　　(c) Enthalpy of solution and dilution.
6.4　The second law of thermodynamics.
　　　(a) Gibbs Energy and spontaneity.
6.5　Gibbs Energy change and equilibrium.
6.6　Absolute entropy and the third law of thermodynamics.

Chapter 7: **CHEMICAL EQUILIBRIUM AND ACIDS-BASES**	**08**

7.1　Law of chemical Equilibrium - Law of mass action and Equilibrium constant.
7.2　Homogeneous Equilibria.
7.3　Heterogeneous Equilibria. Relationship between K_P and K_c
7.4　Le-chatlier principle application   to industrial synthesis of Ammonia and Sulphur trioxide**.**
7.5　Acids, bases and salts- Arrhenius, Bronsted-Lowry and Lewis concepts of acids and bases.
7.6　Common ion effect in the ionization of acids and bases- Hydrolysis of salts and pH of their solutions.
7.7　Buffer solutions- Preparation of Acidic buffer
7.8　Solubility product constant, Common ion effect on solubility of Ionic salts.

Chapter 8: **HYDROGEN AND ITS COMPOUNDS** 8.1 Position of hydrogen in the periodic table. 8.2 Preparation of Dihydrogen 8.3 Hard and soft water Temporary and permanent hardness of water 8.4 Hydrogen peroxide: Preparation; structure and chemical properties; uses. 8.5 Hydrogen as a fuel.	**04**
Chapter 9: **THE s – BLOCK ELEMENTS** **(ALKALI AND ALKALINE EARTH METALS)** **Group 1 Elements** 9.1 Alkali metals; Electronic configurations; 9.2 General characteristics of the compounds of the alkali metals: Oxides; Halides; Salts of Oxy Acids. 9.3 Some important compounds of Sodium: Sodium Carbonate; Sodium Chloride; Sodium Hydroxide; Sodium hydrogen carbonate. 9.4 Biological importance of Sodium and Potassium. **Group 2 Elements:** 9.5 Alkaline earth elements; Electronic configuration; Uses. 9.6 General characteristics of compounds of the Alkaline Earth Metals: Oxides, hydroxides, halides, salts of Oxyacids (Carbonates; Sulphates and Nitrates). 9.7 Some important compounds of calcium: Preparation and uses of Calcium Oxide ; Calcium Hydroxide; Calcium Carbonate; Plaster of Paris; Cement. 9.8 Biological importance of Calcium and Magnesium.	**04**
Chapter 10: **P- BLOCK ELEMENTS GROUP 13** **(BORON FAMILY)** 10.1 General introduction 10.2 Some important compounds of boron – Borax, Ortho boric acid, diborane. 10.3 Uses of boron, aluminium and their compounds.	**04**

Chapter 11: **p-BLOCK ELEMENTS - GROUP 14** **(CARBON FAMILY)** 11.1 General introduction 11.3 Allotropes of carbon. 11.5 Some important compounds of carbon and silicon – carbonmonoxide, carbon dioxide,Silica, silicones, silicates and zeolites.	**04**
Chapter 12: **ENVIRONMENTAL CHEMISTRY** 12.3 Atmospheric pollution; Tropospheric Pollution; Gaseous Air Pollutants (Oxides of Sulphur; Oxides of Nitrogen; Hydro Carbons; Oxides of Carbon (CO; CO_2). Global warming and Green house effect. 12.4 Acid Rain. 12.5 Stratospheric Pollution: Ozone hole- effects of depletion of the Ozone layer. 12.6 Water Pollution: Causes of Water Pollution; International standards for drinking water. 12.9 Green Chemistry: Green chemistry in day-to-day life; Dry cleaning of clothes; Bleaching of paper; Synthesis of chemicals	**04**
Chapter 13: **ORGANIC CHEMISTRY-SOME BASIC PRINCIPLES** **AND TECHNIQUES AND HYDROCARBONS** 13.1 Nomenclature of organic compounds. 13.2 Isomerism. 13.3 Qualitative elemental analysis of organic compounds. 13.4 Quantitative elemental analysis of organic compounds. **HYDROCARBONS** 13.5 Preparation of alkanes 13.6 Properties – Chemical Reactivity, Substitution reactions – Halogenation(free radical mechanism), Combustion, Pyrolysis. 13.7 Methods of preparation of alkenes 13.8 Chemical reactions: Addition of halogen, Hydrogen halides Markovnikov's, anti Markovnikov's or Kharasch effect). Oxidation, Ozonolysis and Polymerization.	**12**

13.9	Methods of preparation of acetylene.	
13.10	Chemical reactions- acidic character of acetylene, addition reactions- of hydrogen, Halogen, Hydrogen halides and water. Polymerization.	
13.11	**Aromatic Hydrocarbons:** Aromaticity.	
13.12	Preparation of benzene. Chemical properties: Electrophilic substitution reactions- Nitration, Sulphonation, Halogenation, Friedel-Craft' alkylation and acylation.	
13.13	Directive influence of functional groups in mono substituted benzene.	
	TOTAL PERIODS	**90**

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SUBJECT- MATHEMATICS - I (w.e.f. 2016-2017)

CHAPTERS	PERIODS
UNIT – I **ALGEBRA** **01 Functions** 1.1 Types of functions – Definitions and Theorems (without proofs) 1.2 Inverse functions and Theorems (without proofs) **02 Mathematical Induction** 2.1 Principle of Mathematical Induction – Statement 2.2 Application of Mathematical Induction (Simple problems) **03 Matrices** 3.1 Types of Matrices – Definitions 3.2 Scalar multiple of a matrix and multiplication of matrices. 3.3 Transpose of a matrix 3.4 Determinants – Properties of determinants (Simple problems) 3.5 Adjoint and Inverse of a matrix- Theorems without proof 3.6 Solving simultaneous linear equations – Cramer's rule and Matrix Inversion method	**12** **05** **16**
UNIT – II **VECTOR ALGEBRA** **04 Addition of Vectors :-** 4.1 Vectors as a triad of real numbers – some basic concepts 4.2 Classification of vectors 4.3 Addition of vectors 4.4 Scalar multiplication of a vector 4.5 Angle between two non- zero vectors 4.6 Vector equations of line and plane	**08**

05	**Product of Vectors :-**	**08**
5.1	Scalar Product of two vectors – Definition and simple problems	
5.2	Properties of Scalar product	
5.3	Expression for Scalar (dot) product, Angle between two vectors	
5.4	Vector product (cross product) of two vectors and properties	
5.5	Vector product in $(\overline{i}, \overline{j}, \overline{k})$ system	
5.6	Vector Areas	
5.7	Scalar Triple Product - Vector triple product Definitions and simple problems	

UNIT – III
TRIGONOMETRY

06	**TRIGONOMETRIC RATIOS UPTO TRANSFORMATIONS**	**12**
6.1	Trigonometric Ratios – Variation – Simple problems	
6.2	Trigonometric Ratios of compound angles – Simple problems	
6.3	Trigonometric Ratios of multiple and sub multiple angles – Simple problems	
6.4	Sum and product – Transformations – Simple problems – Problems on identities	
07	**TRIGONOMETRIC EQUATIONS**	**05**
7.1	General solutions of trigonometric equations – Simple problems	
08	**HYPERBOLIC FUNCTIONS**	**02**
8.1	Definitions of hyperbolic functions – Simple problems	

UNIT – IV
CALCULUS

09	**LIMITS AND CONTINUITY**	**08**
9.1	Limits – Standard Formula – Simple problems (without proofs)	
9.2	Continuity – definition and simple problems.	
10	**DIFFERENTIATION**	**12**
10.1	DERIVATIVE – Definition – Elementary properties – Simple problems.	
10.2	Trigonometric, Inverse Trigonometric, Hyperbolic, Inverse Hyperbolic functions – Derivatives – Simple problems	

11	**APPLICATIONS OF DERIVATIVES**	**12**
11.1	Errors and approximations	
11.2	Geometrical Interpretation of a derivative	
11.3	Equations of Tangents and Normals	
11.4	Lengths of Tangent, Normal, Sub tangent and sub normal	
11.5	Angle between two curves – condition of orthogonality	
11.6	Derivative as rate of change.	

UNIT – V
CO-ORDINATE GEOMETRY (2-D & 3-D)

12	**LOCUS**	**04**
12.1	Locus – Definition – Illustrations – Simple problems	
13	**TRANSFORMATION OF AXES**	**04**
13.1	Translation of axes – Rules and simple problems	
13.2	Rotation of axes – Rules and simple problems.	
14	**THE STRAIGHT LINE**	**14**
14.1	Equation of Straight line – various forms – Illustrations - simple problems	
14.2	Intersection of two straight lines.	
14.3	Family of straight lines - Concurrent lines.	
14.4	Condition for Concurrent lines	
14.5	Angle between two lines	
14.6	Length of the perpendicular from a point to a line	
14.7	Distance between two parallel lines.	
14.8	Concurrent lines - properties related to a triangle (without proof) – only problems	
15	**PAIR OF STRAIGHT LINES**	**18**
15.1	Introduction - Equations of a pair of lines passing through origin, angle between a pair of lines	
15.2	Condition for perpendicular and coincident lines, bisector of angles	
15.3	Pair of bisectors of angles	
15.4	Pair of lines - second degree general equation	
15.5	Conditions for parallel lines – Distance between them, Point of intersection of pair of lines	
15.6	Homogenising a second degree equation with a first degree equation in x and y.	

16 **THREE DIMENSIONAL CO-ORDINATES** 16.1 Co-ordinates – simple problems 16.2 Section formula – Centroid of triangle 16.3 Simple problems related to centroid.	**04**
17 **DIRECTION CONSINES AND DIRECTION RATIOS** 17.1 Direction Cosines - simple problems 17.2 Direction ratios - simple problems	**06**

BOARD OF INTERMEDIATE EDUCATION, TELANGANA., HYDERABAD
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SUBJECT- MATHEMATICS - II (w.e.f. 2016-2017)

CHAPTERS	PERIODS
01 COMPLEX NUMBERS: 1.1 Complex number as an ordered pair of elementary operations 1.2 Expressing the complex numbers in the form of a + ib 1.3 Modulus and amplitude form of a complex number 1.4 Polar form and Argand plane.	**09**
02 QUADRATIC EXPRESSIONS AND EQUATIONS 2.1 Solving Quadratic Equations and finding nature of roots 2.2 Finding out Maximum and minimum values of a Quadratic expression (upto 3(a) – exercise in PAPER-II (A) 2.3 Relation between coefficients and roots of the equations upto 4th order.	**06**
03 BIONOMIAL THEOREM 3.1 Binomial Theorem for Positive Index. 3.2 Problems on expansions, middle terms. Finding out coefficients of x^P and independent terms	**11**
04 PARTIAL FRACTIONS 4.1 Rational Fractions 4.2 Non repeated linear factors, repeated linear factors and irreducible non repeated factors	**06**
05 MEASURES OF DISPERSION 5.1 Range 5.2 Mean Deviation 5.3 Variance and standard deviation for grouped and un grouped data 5.4 Coefficient of variance with equal means and different variances in Frequency distribution analysis 5.5 Solved Problems	**16**

COORDINATE GEOMETRY		
06	**CIRCLES**	**22**
6.1	Equation of a circle, standard form centre and radius.	
6.2	Position of point in the plane of a circle. Definition of a tangent	
6.3	Position of a straight line in the plane of a circle. Condition for a line to be tangent	
07	**SYSTEM OF CIRCLES**	**11**
7.1	Relative positions of two circles	
7.2	Angle between two measuring circles	
7.3	Radical axis of two circles	
08	**PARABOLA**	**10**
8.1	Conic sections – Equation of a Parabola in standard form (without proof)	
8.2	Tangent and Normal at a point on the Parabola	
09	**ELLIPSE**	**06**
9.1	Equation of an ellipse in standard form	
9.2	Tangent and normal at a point on the ellipse	
10	**HYPERBOLA**	**05**
10.1	Equation of a Hyperbola in standard form	
10.2	Tangent and normal at a point of hyperbola	
CALCULUS		
11	**INDEFINITE INTEGRATION**	**18**
11.1	Methods of Integration	
11.2	Integration of different types of functions	
11.3	Integration of methods of substitution	
11.4	Reduction formulae (without proof). Problems only	
12	**DEFINTIE INTEGRALS**	**12**
12.1	Fundamental theorem of integral calculus	
12.2	Properties of definite integrals	
12.3	Reduction formulae (without proofs) only problems	
13	**DIFFERENTIAL EQUATIONS**	**08**
13.1	Formation of differential equations – Degree and order of an ordinary differential equation	
13.2	Solving Differential equations 1- Variables separable method 2- Homogeneous differential equations	

14	**PERMUTATIONS & COMBINATIONS**	**03**
14.1	Definition of Permutation and Combination	
14.2	Simple problems	
15	**PROBABILITY**	**07**
15.1	Definition of Probability	
15.2	Random experiment and events	
15.3	Additional and Multiplication theorems (without proof)	
	TOTAL PERIODS	**150**