BISHOP SCOTT BOYS' SCHOOL

C - Qurriculum
D - Development &
L - Learning
D - Dejectives







Subject: BIOLOGY

Class : XII

Academic Plan : 2025 -26

<u>Month</u>	Course Description	Learning Objectives	Activity	<u>No. of</u> <u>Periods</u>	Portion for PT & TERM Assessment
April	Chapter - 1 : Sexual Reproduction in Flowering Plants : 1) Flower - a Fascinating Organ of Angiosperms 2) Parts of Flower 3) Pollination (Kinds and Agents) 4) Fertilization Process 5) Post Fertilization in Plant of their Structures and Events 6) Development of Embryo 7) Apomixis Chapter - 2 : Human Reproduction : 1) Male and Female Reproductive System 2) Gametogenesis 3) Menstrual Cycle 4) Fertilization and Implantation 5) Pregnancy and Embryonic Development	 Flower and its Significance Accessory Organs; Essential Parts of Flower (Androecium and Gynoecium) Outbreeding devices and Artificial Hybridization ; Self and Cross Pollination Abiotic and Biotic Agents Double Fertilization and their Significance; Syngamy and Triple Fusion Development of Endosperm and their types; Seed; Fruit Embryogenesis of Dicot and Monocot Classification; Recurrent, non recurrent, and Adventive Spermatogenesis and Oogenesis Different Phases of Menstrual Cycle and their disorders; Hygiene and Disposal of Napkins Places of Fertilization and Implantation Cleavage; Morula; Blastula and Gastrula stages; Placenta formation. 	 Dissect the Flower showing their Reproductive parts (Androecium and Gynoecium) Flowers adapted to Pollination by different Agencies (Wind , Insect , Bird and Water) Pollen Germination on Sigma through a Permanent Slide Controlled Pollination - Emasculation ; Bagging and Tagging Identification of stages of Gamete Development (T.S.Testis and T.S.Ovary through Permanent Slides) T.S. of Blastula (Mammalian) through Permanent Slide 	20	Portion for PT - 01 01) Sexual Reproduction in Flowering Plants 02) Human Reproduction 03) Reproductive Health 04) Principles of Inheritance and Variations

	Chapter - 3 :	01) Specially Health for Mother and Child			
	<u>Reproductive Health</u> :	Health Care and also for Goals of such			
	1) Reproductive Health for	Programmes		14	
	Mother and Child	02) Reasons and Impact of Population			
	2) Population Explosion	Explosion ; Methods to Control Population			
	(Rising Population a Global	Explosion			
	Threat)	03) Contraceptive methods (Temporary and			
	3) Population Stabilization	Permanent)			
	and Birth Control	04) Causes o <mark>f Legal and</mark> Illegal Abortion			
	4) Medical Termination of	05) Exampl <mark>es of Sexua</mark> l Transmitted Diseases ;			
	Pregnancy (MTP)	Effects of su <mark>ch disea</mark> ses damage to			
	5) Sexual Transmitted	Reproductive Tract			
May	Diseases (STDs)	06) Abbreviated forms and Importance of IVF-			
	6) Infertility	ET, ICSI, GIFT, ZIFT, IUT, IUI; Adoption			
	<u>Chapter - 4</u> :	01) Father of Gen <mark>etics</mark> Modern Genetics	01) Analyze the seed samples		
	Principles of Inheritance	02) Reasons for Mendel's success ; Advantages	of Pisum sativum in Mendelian		
	and Variations :	of Selecting Pea <mark>Plan</mark> t for Experiment by	Monohybrid Cross which		
	01)Introduction	Mendel	shows the ratio 3:1		
	02)Mendelism	03) Dominant ; <mark>Rece</mark> ssive ; Phenotype ;	02) Analyze the se <mark>ed sam</mark> ples		
	03)Terminology Related to	Genotype ; Alle <mark>le ; T</mark> rait ; Gene ; Heredity ;	of Pisum sativum in Mendelian		
	Mendelism	Inheritance ; Mutation ; Linkage ;	Dihybrid Cross which shows		
	04)Mendel's Experiments	Chromosome ; Punnett Square	the ratio 9:3:3:1		
	on Pea Plant	04) Having Seven Contrasting Traits ; Their			
	05)Monohybrid Cross	Results Fast and Accurate			
	06)Dihybrid Cross	05) Representation of Monohybrid Cross with			(R)
	07)Test Cross and Back	Phenotype and Genotype Ratios			
	Cross	06) Representation of Dihybrid Cross with			
	08)Mendelian Inheritance –	Phenotype and Genotype Ratios			
	Mendel's Law of	07) Test Cross, Back Cross Phenotype,			
	Inheritance	Genotype Ratios			
	09)Extension of Mendelian	08) Three Laws - Dominance ; Segregation and			
	Genetics (Deviation from	Independence Assortment ; Law of Purity			
	Mendelism)	09) Intragenic Interactions – Incomplete			
		Dominance ; Dominance ; Codominance			
		;Multiple Alleles ; Pleiotropy ; Polygenic			

		Inheritance			
	Chapter - 4 :	10) Differentiate between Mitotic and Meiotic	03) Preparation of the	11	
June	Principles of Inheritance	Chromosomal Numbers and their Inheritance	Pedigree Chart of Genetic		
	and Variations :	11) Chromosomal Behaviour during Laws of	Traits of Sex-linked		
	10)Chromosomal Theory of	Segregation and Independent Assortment	Haemophilia / Colour blind /		
	Inheritance	12) Types of Linkage and their Recombination	Tongue rolling / Blood		
	11)Comparison Between	13) Sex Determination in Human beings ; Birds	Groups / Widow 's Peak		
	Gene and Chromosome	and Honey bees	showing at least three		
	Behaviour	14) Types of Mutation ; Mutagenic Agents ;	generations and also showing		
	12)Linkage and	Chromosomal Mutations	their genotypes.		
	Recombination	15) Pedigree Chart ; Autosomal and Sex-linked			
	13) Sex Determination	; Dominant and Recessive characters ; Their			
	14)Concept of Mutation	Appropriate G <mark>enotyp</mark> es			
	15)Pedigree Analysis	16) Examples of Genetic Disorders ; Mendelian			
	16)Genetic Disorders	Genetics Disease <mark>s ; Chromosomal</mark>			
		Abnormalities			
Month	Course Description	Learning Outcome	Activity	No. of	Portion for PT & TERM
				Periods	Assessment
	Chapter - 5 :	01) Position of Nucleic acid and their types	1) Isolation of DNA from	18	
	Molecular Basis of	02) Discovery : Composition of DNA :	Plant materials like Pea		
July	Inheritance :	Europional units (Genes): Seeds of Technology	Seed Spinach Onion		
	01) Introduction	Structure of Polypucloatide chain : Salient	seed, spinden, onion		
	02) Deoxyribonucleic Acid	Footures of the Double belix Structure of DNA			
	(DNA) and its Structure	(2) Packaging in Prokenyetes and Eukeryetes ((R)
	03) Packaging of DNA	03) Packaging in Prokaryotes and Eukaryotes ;			
	Helix	Search for Genetic material ; Transforming			
	04) Operon Concept	Principle (Griffith's Experiment) ; Biochemical			
	05) Human Genome Project	characterisation of Transforming Principle and			
	06) DNA Fingerprinting	their Experiment ; Hershey and Chase			
	Technique	Experiment ; Properties of Genetic Material			
		(DNA Viruses RNA) ; RNA World ; DNA			
		Replication ; Function of DNA (Autocatalytic			
		Heterocatalytic); Process of Semiconservative			
		Replication of DNA(Replication fork , Leading			

	and Lagging strands , Experimental Proof , Machinery and Enzymes) ; Protein Synthesis(Transcription and Translation ; Central Dogma) ; Types of RNA and uses of their Process ; Genetic Code(Characteristics features and their Mutation) ; Regulation of Gene Expression 04) Operon ; Lac Operon(Lactose) 05) Goal and Salient Features of Human Genome Project 06) Steps involved in DNA Fingerprinting and their Applications		
Chapter - 6 : Evolution : 01) Origin and Evolution of Universe and Earth 02) Theories of Origin of Life 03) Evolution of Life Form - Theory 04) Evidences for Biological Evolution 05) Theories of Biological Evolution 06) Organic Evolution 07) Hardy Weinberg's Principle 08) Human Evolution	 01) Introduction 02) Origin of Life ; Different theories prove Origin of Life 03) Different theories 04)Different Evidences proves Biological Evolution 05) Adaptive Radiation ; Darwinian ; Modern Synthetic Theory of Evolution ; Genetic Variation ; Natural Selection ; Isolation 06) Introduction and their Different Theories 07) Equilibrium proves their principle 08) Different Concepts for Human Evolution 	 Morphological and Anatomical Evidences for showing Evolutionary changes (Homologous and Analogous) and proving with appropriate examples Numerical based for proving Equilibrium 	R

	Chapter - 7:	01)Good Health	1) Given Specimen /		Portion for TERM – 01
	<u>Human Health and</u>	02) Common Diseases like Bacterial , Vital ,	Permanent Slide showing		
	<u>Diseases</u> :	Parasitic , Fungal	Common Diseases like	22	01) Sexual Reproduction in
	01) Introduction	03) Introduction	Amoebiasis , Malaria ,		Flowering Plants
	02) Common Diseases in	04) Innate immunity and Acquired immunity	Ascariasis, Ring worm		02) Human Reproduction
August	Human beings	05) Differentiate Vaccination and			
-	03) Immunity	Immunization			03) Reproductive Health
	04) Types of Immunity	06) Allergens causes Allergies			(4) Principles of Inheritance and
	Immunization	07) Introduction and their meaning			Variations
	06) Allergies	08) Lymphoidal organs and their types			v anations
	(Hypersensitivity)	09) Introduction with appropriate examples			05)Molecular Basis of Inheritance
	07) Autoimmunity	STDs and other Diseases of the Reproductive			
	08) Human Immune	Tract			06) Evolution
	09) Sexual Transmitted	10) Introduction : Difference between Normal			07) Human Health and Diseases
	Diseases (STD)	Cell and Cancer Cell ; Causes, Detection,			
	10) Cancer	Diagnosis, Treatment of Cancer			08) Microbes in Human Welfare
	11) Drugs and Alcohol	11) Effect of IAdolescence-Drugs and Alcohol			
	Abuse	Abuse : Addiction and Dependent : Effects.			
	12) Infections and Non	Prevention and Control of such Abuses			
	Infectious Disease	12) Effects of Infectious and Non Infectious			
	13) Maintaining Good	Diseases	No		
	rieaiur, ruga, Exercise	13) Maintain Good Health by different means			
	C				R

	Chapter - 8 :	01) Different Food Processing ; Single Cell		10	
		Protein (SCP)			
	Microbes in Human				
	<u>Welfare</u> :	02) Production of Alcoholic Beverages,			
Septemb	01) Microbes in Household	Organic Acids , Vitamins , Antibiotics and			
<u>er</u>	Products	Enzymes also Gibberellin			
	02) Microbes in Industrial	03) Composition of Sewage and Micro			
	Production	organism , and Process of Sewage Treatment			
	U3) Microbes in Sewage	04) Methanogens and Biogas Plant			
	Treatment	05) Appropriate Examples for Microbial bio-			
	04) Microbes in Production	control agents : Biofertilisers and their sources			
	of Biogas				
		06) Microbes in Food Preparation			
	05) Microbes as Biocontrol				
	Agents				
	06) Importance of Microbes				
	in Human Welfare				
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	Chapter - 9 ·	01)Introduction of Biotechnology	1)A temporary Acetocarmine	14	Portion for PT - 02
		or just oddetion of biotechnology	stained mount of the onion	14	
	Biotechnology -	02)Tools of Recombinant DNA Technology ;	root tip and point out the		09) Biotechnology – Principles
	Principles and Processes :	Restriction Enzymes ; Cloning Vectors ;	Interphase, Prophase,		and Processes
	01) Process and Principles	Competent Host(For Transformation with	Metaphase, Anaphase,		
Octobor	of Biotechnology	Recombinant DNA); Process of Recombinant	Telophase of Mitosis Cell		10) Biotechnology – and its
October	of blottermology	DNA Technology	Division.		Application
	02) Technique of Gene				
	Cloning and rDNA				
	Technology				

	<u>Chapter - 10</u> :	01)Introduction of Biotechnology and their			
	Biotechnology - and its	Applications			
	Application :	02) Production Gran Talaranca Abiatic			
	<u></u>	Stresses Post Posistance Cron Riofortification		17	
	01) Introduction	· Genetically Modified Organisms (Bt Cotton)			
	02) Biotechnological	, Genetically Mounted Organishis (Bt Cotton)			
	Application in Agriculture	03) Genetically Engineered Insulin ; Gene			
		Therapy (ADA) ; Treatment of SCID ; Molecular			
	03) Biotechnological	Diagnosis by PCR, ELISA and Uses of DNA/RNA			
	Application in Medicine	probe			
	04) Transgenic Animals	04)For Bioactive products and their Uses			
November	05) Ethical Icence	by i or bloactive products and their oses			
	00) Eulical issues	05)Biopiracy and Patents ; GEAC(Genetic			
		Engineering App <mark>roval</mark> Committee)			
	<u>Chapter - 11</u> :	01) Introduction to Ecology	1) Plant Population Density		
	Organisms and		by Quadrat Met <mark>hod</mark>		
	Population :	02) Definition of Habitat and Niche ;	2) Plant Population		
		Population Attributes, the history variation	Erequency by Quadrat		
	01) Introduction	03) Factors related to such Growth	Method		
	02) Ecology (Organism ;				R
	Population ; Community	04) Interactions with Predation, Competition,			
	and Biome	Amongalism			
	03) Population Growth	Amerisalism			
	obji opulaton Growin				
	04) Population Interactions				

	<u>Chapter - 12</u> :	01) Introduction and Interactions in the Ecosystem	1) Plants Adapted in Xerophytic Condition	07	01) Sexual Reproduction in Flowering Plants
	Ecosystem :				02) Human Reproduction
	01) Introduction	02) Definition of Stenothermal, Eurythermal , Stenohaline Euryhaline ; Responses to Abiotic	2) Animals Adapted in Desert Condition		03) Reproductive Health04) Principles of Inheritance and
	02) Types of Ecosystem	Factors ; Allen's rule	3) Plants Adapted in		Variations 05)Molecular Basis of Inheritance
	03) Ecosystem – Structure and Function	03) Definition of <mark>Ecosystem ; Components of</mark> the Environment <mark>; Productivity</mark> ,	Aquatic Condition		06) Evolution 07) Human Health and Diseases
	04) Productivity	Decomposition, Energy Flow Nutrient Cycling ; Function of Ecosystem (Photosynthetically	4) Animals Adapted in Aquatic Condition		08) Microbes in Human Welfare 09) Biotechnology – Principles
	05) Energy Flow in an	Active Radiation, Productivity, Trophic Level,			and Processes
	Ecosystem	Energy Flow, Food Chain and Web, Ecological			10) Biotechnology – and its
<u>December</u>	06) Ecological Pyramids	Pyramids, Decomposition, Biogeochemical Cycle, Types of Ecosystem, Ecosystem Services and Management)	SCO		Application 11) Organisms and Population 12) Ecosystem
	C	 04) Primary Production ; Types of Productivity; Detritus ; Steps in Decomposition ; Factors affecting the rate of Decomposition 05) Different Trophic Levels of The Ecosystem 06) Pyramids of Biomass , Numbers , Energy ; Limitations of Ecological Pyramids 			13) Diversity and its Conservation

<u>Chapter - 13</u> :	01) Species an Earth (India) ; Importance of		
Diversity and its	Species Diversity to the Ecosystem		
Conservation :	02) Latitudinal and Altitudinal Gradients		
01) Biodiversity	03) Causes of Biodiversity Loss		
02) Patterns of Biodiversity	04)Why and How Conserve Bio diversity		
03) Loss of Biodiversity			
04) Conservation of			
Biodiversity			

