

EMBASSY OF INDIA SCHOOL (KV) MOSCOW					
SPLIT UP SYLLABUS - CLASS XII - BIOLOGY 2024-25					
S NO	MONTH	NO OF WORKING DAYS	Description (Title of the Chapter, Topics /Units)	SUGGESTIVE PRACTICAL / PROJECT/MDP/TEST /ASSIGNMENT	SUGGESTED METHODOLOGY TO BE USED (LIKE PPT/AIL /EXPERIENTIAL LEARNING
1	APRIL	21	Chapter-2: Sexual Reproduction in Flowering Plants Flower structure; development of male and female gametophytes; pollination - types, agencies and examples; out breeding devices; pollen-pistil interaction; double fertilization; post fertilization events - development of endosperm and embryo, development of seed and formation of fruit; special modes- apomixis, parthenocarpy, polyembryony; Significance of seed dispersal and fruit formation.	Pollen Germination , agents of pollination	PPT / BLACK BOARD ILLUSTRATIONS
			Chapter-3: Human Reproduction Male and female reproductive systems; microscopic anatomy of testis and ovary; gametogenesis -spermatogenesis and oogenesis; menstrual cycle; fertilisation, embryo development upto blastocyst formation, implantation; pregnancy and placenta formation (elementary idea); parturition (elementary idea); lactation (elementary idea).		SPECIMENS
2	MAY/ JUNE	21 + 6	Chapter-4: Reproductive Health Need for reproductive health and prevention of Sexually Transmitted Diseases (STDs); birth control - need and methods, contraception and medical termination of pregnancy (MTP); amniocentesis; infertility and assisted reproductive technologies - IVF, ZIFT, GIFT (elementary idea for general awareness).	permanent slides (gametogenesis, embryogenesis)	PPT / BLACK BOARD ILLUSTRATIONS
			Chapter-5: Principles of Inheritance and Variation Heredity and variation: Mendelian inheritance; deviations from Mendelism – incomplete dominance, co-dominance, multiple alleles and inheritance of blood groups, pleiotropy; elementary idea of polygenic inheritance; chromosome theory of inheritance; chromosomes and genes; Sex determination - in humans, birds and honey bee; linkage and crossing over; sex linked inheritance - haemophilia, colour blindness; Mendelian disorders in humans - thalassemia; chromosomal disorders in humans; Down's syndrome, Turner's and Klinefelter's syndromes.	Pedigree Chart	PPT / BLACK BOARD ILLUSTRATIONS
			Chapter-6: Molecular Basis of Inheritance Search for genetic material and DNA as genetic material; Structure of DNA and RNA; DNA packaging; DNA replication; Central Dogma; transcription, genetic code, translation; gene expression and regulation - lac operon; Genome, Human and rice genome projects; DNA fingerprinting.		PPT / BLACK BOARD ILLUSTRATIONS

3	JULY	18	Chapter-7: Evolution Origin of life; biological evolution and evidences for biological evolution (paleontology, comparative anatomy, embryology and molecular evidences); Darwin's contribution, modern synthetic theory of evolution; mechanism of evolution - variation (mutation and recombination) and natural selection with examples, types of natural selection; Gene flow and genetic drift; Hardy- Weinberg's principle; adaptive radiation; human evolution.	Homologous /analogous organs	PPT / BLACK BOARD ILLUSTRATIONS
4	AUGUST	19	Chapter-8: Human Health and Diseases Pathogens; parasites causing human diseases (malaria, dengue, chikungunya, filariasis, ascariasis, typhoid, pneumonia, common cold, amoebiasis, ring worm) and their control; Basic concepts of immunology - vaccines; cancer, HIV and AIDS; Adolescence - drug and alcohol abuse. Chapter-10: Microbes in Human Welfare Microbes in food processing, industrial production, sewage treatment, energy generation and microbes as bio-control agents and bio-fertilizers. Antibiotics; production and judicious use Chapter-11: Biotechnology - Principles and Processes Genetic Engineering (Recombinant DNA Technology).	Diseases and symptoms	PPT / BLACK BOARD ILLUSTRATIONS
					PPT / BLACK BOARD ILLUSTRATIONS
				DNA Extraction	PPT / BLACK BOARD ILLUSTRATIONS
					PPT / BLACK BOARD ILLUSTRATIONS
5	SEPTEMBER	20	Chapter-12: Biotechnology and its Applications Application of biotechnology in health and agriculture: Human insulin and vaccine production, stem cell technology, gene therapy; genetically modified organisms - Bt crops; transgenic animals; biosafety issues, biopiracy and patents. Chapter-13: Organisms and Populations Population interactions - mutualism, competition, predation, parasitism; population attributes - growth, birth rate and death rate, age distribution. (Topics excluded: Organism and its Environment, Major Abiotic Factors, Responses to Abiotic Factors, Adaptations)	Population Density	PPT / BLACK BOARD ILLUSTRATIONS
6	OCTOBER	18	Chapter-14: Ecosystem Ecosystems: Patterns, components; productivity and decomposition; energy flow; pyramids of number, biomass, energy (Topics excluded: Ecological Succession and Nutrient Cycles) Chapter-15: Biodiversity and its Conservation Biodiversity-Concept, patterns, importance; loss of biodiversity; biodiversity conservation; hotspots, endangered organisms, extinction, Red Data Book, Sacred Groves, biosphere reserves, national parks, wildlife, sanctuaries and Ramsar sites.		PPT / BLACK BOARD ILLUSTRATIONS
7	NOVEMBER /DECEMBER	20 + 10	REVISION , PRE BOARDS		
8	JANUARY		PRACTICAL EXAM		