

WEST BENGAL COUNCIL OF HIGHER SECONDARY EDUCATION

SUBJECT : BIOLOGICAL SCIENCE (BIOS)

CLASS – XII

SEMESTER - III

FULL MARKS: 35

UNIT No.	TOPICS	HOURS	MARKS
UNIT VI REPRODUCTION	<u>Chapter 1: Sexual Reproduction in flowering plants</u> 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; Parthenocarp; Polyembryony; Seed dispersal and fruit formation and their significance.	15	15
	<u>Chapter 2: Human reproduction</u> Male and female reproductive systems; Anatomy and Histology of testis and ovary, Gametogenesis-Spermatogenesis and Oogenesis; Menstrual cycle; Fertilization, embryo development up to blastocyst, formation and implantation; Pregnancy and placenta formation and function; Parturition: mechanism and neuroendocrine system involved in this mechanism, Lactation.	15	
	<u>Chapter 3: Reproductive health</u> 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).	3	
UNIT-VII GENETICS AND EVOLUTION	<u>Chapter 4: Principles of Inheritance and variation.</u> 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 honeybees; Linkage and crossing over; Sex linked inheritance hemophilia, colour blindness; Mendelian disorders in humans Thalassaemia; Pedigree Analysis; chromosomal disorders in humans; Down's syndrome, Turner's syndrome and Klinefelter's syndrome.	20	57
	<u>Chapter 5: Molecular basis of inheritance</u> Search for genetic material and DNA as genetic material (experiments on bacterial transformation by F. Griffith; Avery, MacLeod and McCarty; Experiment by Hershey and Chase; 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.	25	

<u>Chapter 6: Evolution</u> Origin of life; Biological evolution and evidences for biological evolution (Palaeontology, Comparative Anatomy, Embryology and molecular evidence); Darwin's contribution, modern synthetic theory; Mechanism of evolution – Variation (Mutation and Recombination) and Natural selection with examples, types of natural selection; Gene flow and genetic drift; Hardy-Weinberg Principle; Adaptive radiation; Human evolution.	12	
--	----	--

Edutips