

WEST BENGAL COUNCIL OF HIGHER SECONDARY EDUCATION

SUBJECT : BIOLOGICAL SCIENCE (BIOS)

CLASS – XI

SEMESTER - II

FULL MARKS: 35

UNIT No.	TOPICS	HOURS	MARKS
UNIT IV (PLANT PHYSIOLOGY)	<u>Chapter-11: Photosynthesis in Higher Plants</u> Photosynthesis as a means of autotrophic nutrition; site of photosynthesis, pigments involved in photosynthesis (structure of chlorophyll; empirical formula of chlorophyll a, b, c, d, e, bacteriochlorophyll, carotene and xanthophyll); photochemical and biosynthetic phases of photosynthesis; cyclic and non-cyclic photophosphorylation; chemiosmotic hypothesis, photorespiration, C3 and C4 pathways, CAM Cycle (schematic pathway only), factors affecting photosynthesis.		
	<u>Chapter-12: Respiration in Plants</u> Exchange of gases; cellular respiration — glycolysis, fermentation (anaerobic), TCA cycle and electron transport system (aerobic); energy relations — number of ATP molecules generated; amphibolic pathways; respiratory quotient.		
	<u>Chapter-13: Plant Growth and Development</u> Seed germination; phases of plant growth and plant growth rate; conditions of growth; differentiation, dedifferentiation and redifferentiation; sequence of developmental processes in a plant cell; plant growth regulators — auxin, gibberellin, cytokinin, ethylene, ABA, Photoperiodism — Definition and different types.		
UNIT V (HUMAN PHYSIOLOGY)	<u>Chapter – 14: Digestion and Absorption</u> Introduction; Structure of human alimentary canal (drawing, labelling and function of different parts including dental arrangement and digestive glands); Role of digestive enzymes and the GI hormone in digestion; Peristalsis; Digestion, absorption and assimilation of protein, carbohydrate and fat; egestion; Nutritional and digestive disorders — PEM (protein energy malnutrition) indigestion, constipation, vomiting, jaundice, diarrhoea.		
	<u>Chapter-15: Breathing and Exchange of Gases</u> Respiratory organs in animals (name only); Respiratory system in humans; mechanism of breathing and its regulation in humans - exchange of gases, transport of gases and regulation of respiration, respiratory volume; disorders related to respiration — asthma, emphysema, occupational respiratory disorders.		
	<u>Chapter-16: Body Fluids and Circulation</u> Composition of blood, blood groups, coagulation of blood; composition of lymph and its function; human circulatory system - Structure of human heart and blood vessels; cardiac cycle, cardiac output, ECG; double circulation; regulation of cardiac activity; disorders of circulatory system — hypertension, coronary artery disease, angina pectoris, heart failure.		

	<p><u>Chapter-17: Excretory Products and their Elimination</u> Modes of excretion — ammonotelism, ureotelism, uricotelism; human excretory system — structure and function; urine formation, osmoregulation; counter-current mechanism; regulation of kidney function — renin-angiotensin system, atrial natriuretic factor, ADH and diabetes insipidus; role of other organs in excretion; disorders — uremia, renal failure, renal calculi, nephritis; dialysis and artificial kidney, kidney transplant.</p>		
	<p><u>Chapter-18: Locomotion and Movement</u> Types of movement - ciliary, flagellar, muscular; skeletal muscle, contractile proteins and muscle contraction; skeletal system and its functions; joints; disorders of muscular and skeletal systems - myasthenia gravis, tetany, muscular dystrophy, arthritis, osteoporosis, gout.</p>		
	<p><u>Chapter-19: Neural Control and Coordination</u> Mechanism of neural control and co-ordination; Neuron and nerves; Nervous system in humans - central nervous system; peripheral nervous system and visceral nervous system; Brain and its major parts- cerebral cortex, thalamus, hypothalamus and limbic system; mid-brain, pons, medulla, cerebellum and spinal cord (function only); Modes of distribution and function of P.N.S. and autonomic nervous system; Generation and conduction of nerve impulse; reflex action and reflex arc; Sense organs – Sensory perception, outline structure and function of eye and ear; Disorders — Parkinson's and Alzheimer's diseases.</p>		
	<p><u>Chapter-20: Chemical Coordination and Integration</u> Endocrine glands and hormones; human endocrine system — hypothalamus, pituitary, pineal, thyroid, parathyroid, adrenal, pancreas, gonads; mechanism of hormone action (protein and steroid hormones); role of hormones as messengers and regulators, hypo- and hyperactivity and related disorders; dwarfism, acromegaly, cretinism, goitre, exophthalmic goitre, diabetes, Addison's disease.</p>		