HIRALAL MAZUMDAR MEMORIAL COLLEGE FOR WOMEN

DAKSHINESWAR, KOLKATA – 700 035 ★ TEL: 2564 5148

ACADEMIC CALENDER
SUBJECT- PHYSIOLOGY GENERAL
SESSION- 2017-2018

PART-I
PAPER- I (THEORETICAL); F.M.-100

SESSION	TOPIC	REMARKS
Term 1, Half 1 (July'17- September'17)	**1. Units of Human System** : Structure and functions of plasma membrane, nucleus and different cell organelles – Endoplasmic reticulum, Golgi bodies, Mitochondria, Lysosome and Peroxisome. Structure, function and classification of Epithelial, Connective, Muscular and Nervous tissues. **2. Biophysical and Biochemical Principles**: Physiological importance of the following physical processes: Diffusion , Osmosis, Dialysis, Ultrafiltration , Surface tension, Adsorption and Absorption. A brief idea about acids, bases, buffers, indicators . pH – definition, significance and maintenance of pH in the blood. Colloids - definition, classification and physiological importance. Enzymes: definition, classification, factors affecting enzyme action. Concept of coenzymes and isozymes. **3. Digestive System** : Structure in relation to functions of alimentary cana1 and digestive glands. Composition, functions and regulation of secretion of digestive juices including bile. Digestion and absorption of carbohydrate, protein and lipid. Movements of the stomach and small intestine. **4.Biochemistry and Metabolism** : **Carbohydrates :** Definition and classification. *Monosaccharides* – Classification, structure. Chemical reactions of monosaccharides (Glucose & Fructose) ---- Reactions with concentrated mineral acids, alkali, phenylhydrazine and their biochemical importance. *Disaccharides* – Maltose, Lactose and Sucrose: Structure, occurrence and physiological importance. *Polysaccharides* – Starch, Glycogen, Dextrin, Cellulose.	4 weeks Puja Vacation

	Lipids : Definition and classification. Fatty acids-Classification. Properties of Fat and Fatty acids-Hydrolysis, Saponification,Saponification number, Iodine number, Hydrogenation, Rancidity-Acid number. Phospholipids, Cholesterol & its ester - physiological importance. **Amino acids, Peptides and Proteins :** Classification and structure. Structure of peptide bonds. Glycolysis,TCAcycle, Glycogenesis,Glycogenolysis. Gluconeogenesis. Depot fat. Beta oxidation of saturated fatty acid Ketone bodies – formation and significance. Deamination,Transamination. Amino acid pool - fate and functions of amino acids in the body. Formation of urea and its importance. **5. Nutrition** : Basic constituents of food and their nutritional significance. Vitamins: definition, classification, functions, deficiency symptom.s and daily requirements. Hypervitaminosis. Mineral metabolism - Ca. P, Fe. BMR: definition, factors affecting, determination of BMR. Respiratory quotient: definition, factors affecting and significance. Biological value of proteins. Essential and non-essential amino acids, Nitrogen equilibrium. Minimum protein requirement-Positive and negative nitrogen balance. SDA : definition and: importance. Composition and nutritional value of common Indian foodstuffs – rice, wheat, pulses, egg, meat, fish and milk. Calorie requirement. Concept of ACU.	
Term 1, Half 2 (October'17-December'17)	**6. Blood and Body Fluids :** Blood: composition and functions. Plasmapheresis. Bone marrow. Formed elements of blood - their morphology and functions. Erythropoiesis and leucopoiesis. Haemoglobin : different types of compounds and derivatives. Coagulation of blood : mechanism, factors affecting, procoagulants, anticoagulants, and disorders of coagulation. Anatomical structure of lymphatic system, cellular and non cellular component of lymph, connection between blood circulatory system and lymphatic system. **7.Cardiovascular Physiology I :** Anatomy and histology of the heart. Properties of cardiac muscle. Origin and propagation of cardiac impulse. Cardiac cycle : events. Heart sounds. Heart rate and regulation. Cardiac output: methods of determination (dye dilution and Fick principle), factors affecting, regulation. ECG -- normal waves and leads.	Annual Sports & 1 week Winter Recess

Term 2, Half 1 (January'18-March'18)	**8.Cardiovascular Physiology II :** Structure of arteries, arterioles, capillaries. venules and veins. Pulse - arterial and venous. Blood pressure and its regulation and factors controlling. Baro- and chemoreceptors. Vasomotor reflexes. Methods of measurement of blood pressure. Peculiarities of regional circulations: coronary, pulmonary, renal, hepatic and cerebral. **9. Respiratory Physiology** : Anatomy and histology of the respiratory passage and organs. Role of respiratory muscles in breathing. Artificial respiration. Significance of physiological and anatomical dead space. Lung volumes and capacities. Exchange of respiratory gases between lung and blood and between blood and tissues. Transport of oxygen and carbon dioxide in blood. Regulation of respiration - neural and chemical. Hypoxia. respiratory changes during physical exercise. Hypobaric environment - effects on physiological system, acclimatization. Hyperbaric conditions and Caisson disease. Brief idea of cyanosis, dyspnoea, hyperpnoea, apnoea and asphyxia. **10. Renal Physiology :** Relationship between structure and functions of kidney. Mechanism of formation of urine. Normal and abnormal constituents of urine. Physiology of urine storage and micturition. Renal regulation of acid-base balance. Non-excretory functions of kidney.	3rd Year Test Exam 2nd Year Test Exam
Term 2, Half 2 (April'18-June'18)	Revision Classes	1st Year Test Exam

PART-II PAPER- II (THEORETICAL); F.M.-100		
SESSION	**TOPIC**	**REMARKS**
Term 1, Half 1 (September'17)	**1. Endocrine System I:** Anatomy of endocrine system. Hormones - classification. Basic concept of regulation of hormone actions. Positive and negative feedback mechanism. Elementary idea of hormone action. *Hypothalamus :* Basic concept of neurohormone. Hypothalamo-hypophyseal tract and portal system. *Pituitary:* Histological structure, hormones, functions. Hypo and hyperactive states of pituitary gland. *Thyroid:* Histological structure. Functions of thyroid hormones (T4T3) Thyrocalcitonin. Hypo and hyper-active states of thyroid. *Parathyroid:* Histological structure, functions of parathyroid hormone. Tetany. **2. Endocrine System II:** *Adrenal Cortex:* Histological structure and functions of different hormones. Hypo and hyper-active states of adrenal cortex. *Adrenal Medulla:* Histological structure and functions of medullary hormones. The relation of adrenal medulla with the sympathetic nervous system. *Pancreas:* Histology of islets of Langerhans. Origin and functions of pancreatic hormones. Diabetes mellitus. Brief idea of the origin and functions of renin-angiotensin, prostaglandins. erythropoietin and melatonin. Elementary idea of gastrointestinal hormone. **3.Reproductive Physiology I:**Primary and accessory sex organs and secondary sex characters. Testis: histology, spermatogenesis, testicular hormones and their functions. Ovary: histology, oogenesis, ovarian hormones and their functions. **4.Reproductive Physiology II:**Oestrus and menstrual cycles and their hormonal control. Fertilization, implantation and structure and functions of placenta. Maintenance of pregnancy – role of hormones. Development of mammary gland and lactation - role of hormones.	4 weeks Puja Vacation

Term 1, Half 2 (October'17-December'17)	**5. Skin and Regulation of Body Temperature:** Structure and functions of skin. Insensible and sensible perspiration Regulation of body temperature -- physical and physiological processes involved in it. Physiology of sweat secretion and its regulation. of extreme temperature on humans. **6. Muscle Physiology :** Different types of muscle and their structure. Red and white muscle. Muscular contraction: structural, mechanical and chemical changes in skeletal muscle during contraction and relaxation. Isotonic and isometric contractions. Properties of muscle: all or none law, beneficial effect, summation. refractory period, tetanus, fatigue. A brief idea about the muscle spindle. **7. Nerve Physiology :** Structure and classification of nerves. Origin and propagation of nerve impulse. Velocity of impulse in different types of nerve fiber. Properties of nerve fibers: all or none law, rheobase and chronaxie, refractory period. indefatiguability. Synapses: structure, different types, mechanism of synaptic transmission. Motor unit. Myoneural junction: structure, mechanism of impulse transmission. Degeneration and regeneration in nerve fibers.	Annual Sports & 1 week Winter Recess
Term 2, Half 1 (January'18-March'18)	**8. Sensory Physiology :** Classification of general and special senses and their receptors. Receptors as biological transducer. (a) *Olfaction and Gustation:* Structure of sensory organ, neural pathway of olfactory and gustatory sensation. Physiology of olfactory and gustatory sensation. Olfactory and gustatory adaptation. After-taste. (b) *Audition:* Structure of ear, auditory pathway, mechanism of hearing. (c) *Vision:* Structure of the eye. Histology of retina. Visual pathway. Light reflex. Chemical changes in retina on exposure to light. Accommodation - mechanism and pathway. Errors of refraction. Positive and negative after-image. Light and dark adaptation. Elementary idea of colour vision and colour blindness.	3rd Year Test Exam 2nd Year Test Exam

	9. Nervous System I : A Brief outline of nervous system: CNS & PNS; Anatomy of Brain. A brief outline of organization and basic functions (sensory, motor and association) of the nervous system, central and peripheral nervous system. (emphasis on the structure of spinal cord and brain stem). Ascending tracts carrying touch, kinaesthetic, temperature and pain sensations. Descending tracts: pyramidal tract and brief outline of the extra-pyramidal tracts. Pain. Reflex action - definition, reflex arc, classification, properties. Functions of the spinal cord. Outline of functions of brain stem. **10. Nervous System II :** A brief idea of the structure, connections and functions of cerebellum. Different nuclei and functions of thalamus and hypothalamus. Cerebral cortex: histological structure and localization of functions. CSF : composition, formation, circulation and functions. A brief description of the organization of the autonomic (sympathetic and parasympathetic) nervous system. Functions of sympathetic and parasympathetic nervous system. A brief idea of speech, aphasia, conditioning, learning and memory.	
Term 2, Half 2 (April'18-June'18)	Revision Classes	1st Year Test Exam

PART I + PART II PAPER- III (PRACTICAL); F.M.-100		
IST YEAR (PART I)		
SESSION	**TOPIC**	**REMARKS**
Term 1, Half 1 (July'17-September'17)	**1. Biochemistry :** ***i) Qualitative Experiments:*** Qualitative tests for identification of starch, dextrin, lactose, sucrose, glucose, fructose, albumin, gelatin, peptone, lactic acid, hydrochloric acid, uric acid, acetone, glycerol, bile salts, urea.	4 weeks Puja Vacation
Term 1, Half 2 (October'17-December'17)	***ii) Quantitative Experiments:*** a) Quantitative estimation of glucose by Benedict's method. b) Quantitative estimation of amino-nitrogen by Sorensen's formol titration method. *Percentage and total quantity to be done.*	Annual Sports & 1 week Winter Recess
Term 2, Half 1 (January'18-March'18)	***iii) Demonstration:*** a) Quantitative estimation of Sucrose by Benedict's method. b) Analysis of wheat, rice, milk and oil to test the presence of carbohydrate, protein and fat. c) Salivary amylase activity on starch at body temperature (37.5 C), above 40°C and in presence of HCl. **2. Histology:** ***i)Identification of permanent slides*:** Bone, Lung, Trachea, Spleen, Lymph gland, Liver, Salivary gland, Pancreas, Adrenal gland, , Thyroid gland, Spinal cord, Cerebellum, Cerebral cortex, Kidney, Skin, Testis, Ovary, Tongue, Oesophagus, Stomach, Small intestine, Large intestine.	3rd Year Test Exam 2nd Year Test Exam
Term 2, Half 2 (April'18-June'18)	Revision Classes	1st Year Test Exam

IIND YEAR (PART II)		
SESSION	**TOPIC**	**REMARKS**
Term 1, Half 1 (September'17)	***ii) Haematological experiments :*** a) Leishman's staining of human blood film and identification of different types of blood corpuscles. b) Preparation of Haemin crystals.	4 weeks Puja Vacation
Term 1, Half 2 (October'17-December'17)	***iii) Fresh tissue experiments:*** a) Examination and staining of fresh tissues (other than blood) squamous, cornified, ciliated and columnar epithelium, skeletal muscle, cardiac muscle by methylene blue stain. b) Silver nitrate preparation of node of Ranvier. ***iv) Demonstration:*** Staining of adipose tissue by Sudan III or IV.	Annual Sports & 1 week Winter Recess
Term 2, Half 1 (January'18-March'18)	**3. Experimental Physiology with Human Experiment :** ***i) Measurement of systolic and diastolic arterial pressure by sphygmomanometer and determination of pulse pressure and mean pressure during rest and exercise.*** ***ii)Use of kymograph, induction coil and key.*** ***iii) Normal tracing of toad's unperfused heart beat*** **.** ***iv) Effect of warm saline on toad's unperfused heart beat.*** ***v)Demonstration :*** a)Recording of simple muscle curve with sciatic-gastrocnemius muscle preparation of toad and determination of latent period, period of contraction and period of relaxation and maximum	3rd Year Test Exam 2nd Year Test Exam

	height of contraction. b) Effect of temperature on simple muscle twitch. c) Effect of calcium and potassium ions on unperfused toad's heart beat. d) Effect of adrenaline/acetylcholine on unperfused toad's heart beat.	
Term 2, Half 2 (April'18-June'18)	Revision Classes	1st Year Test Exam
PART-III **PAPER- IVA (THEORETICAL); F.M.-50**		
SESSION	**TOPIC**	**REMARKS**
Term 1, Half 1 (August'17-September'17)	**1. Haematology :** Blood groups - ABO and Rh. Blood transfusion - precaution and hazards. Immunological basis of identification of ABO and Rh blood groups. Functions and estimation of haemoglobin. Abnormal haemoglobins - thalassaemia and sickle-cell anaemia. Definition, determination and significance of TC, DC, ESR, Arneth count, PCV, MCV, MHC, MCHC, bleeding time, clotting time and prothrombin time. Anaemia - types (definition and causes). Leucocytosis, leucopenia and leukaemia. Purpura. **2. Biochemistry and Molecular Biology:** Brief idea of HMP shunt and its significance (detailed enzymatic reactions are not required). Purine and pyrimidine bases, nucleosides, nucleotides and polynucleotides. Structure of DNA and RNA. Elementary idea of gene, genome, transcription, genetic code, translation and genetic engineering. Application of PCR and western blot and diagnosis. Pathophysiological significance of the following blood constituents: glucose, urea, creatinine, uric acid, cholesterol, bilirubin, SGPT and SGOT, alkaline and acid phosphatases and ketone bodies. **3. Microbiology and Immunology:** Virus - DNA virus and RNA virus. Bacteriophage. Bacteria-structure and morphological classification. Gram positive and Gram negative and acid-fast bacteria. Pathogenic and non-pathogenic bacteria - definition with	4 weeks Puja Vacation

	a few examples. Sterilization and Pasteurization. A brief idea of antibiotics. Elementary knowledge of innate and acquired immunity. Humoral and cell mediated immunity Vaccination - principles and importance of immunization. Basic principle of immunological detection of pregnancy.	
Term 1, Half 2 (October'17-December'17)	**4. Community Health and Management:** Principle of balanced diet formulation of individuals - infants, growing children, students, pregnant women, lactating women and aged persons. Antioxidants and Aging. Some common pollutants and their effects - carbon monoxide, lead and arsenic. Effects of noise on human body and preventive measures. Role of physiologist in community health. Etiology, Pathophysiology and Management of: Anaemia, Iodine deficiency, Hypothyroidism and Hyperthyroidism, Obesity, Polycystic ovary, Recurrent spontaneous abortion, Diabetes, Hypertension, Atherosclerosis, Gout, Arthritis, Ventricular Hypertrophy, Marasmus, Kwashiorkor, Vit A, Iron and iodine deficiency, Alzheimer's disease, Dementia, Depression & Anxiety disorder, Stroke, Migraine, Asthma, Chronic Obstructive Pulmonary Disease (COPD), Tuberculosis, Diarrhoea, Dysentry, Giardiasis, Ulcer, Typhoid fever, Malaria, Influenza, Common cough and cold. Myopia, Hypermetropia, Cataract, Macular degeneration, Glaucoma, Osteoporosis & Hormone replacement therapy, Eczema. Pharmacodynamics and Pharmacokinetics (definition only), Dose and mechanism of action of different drugs in the management of above mentioned diseases.	Annual Sports & 1 week Winter Recess

Term 2, Half 1 (January'18-March'18)	**5. Biostatistics :** Basic concepts – variable, population, parameter, sample, statistic. Classification of data – qualitative and quantitative, continuous and discontinuous. Presentation of data– frequency distribution, bar diagram, pie diagram, frequency polygon and histogram. Mean, median, mode, standard deviation and standard error.	3rd Year Test Exam 2nd Year Test Exam
Term 2, Half 2 (April'18-June'18)	Revision Classes	1st Year Test Exam

PART-III **PAPER- IVB (PRACTICAL); F.M.-50**		
SESSION	**TOPIC**	**REMARKS**
Term 1, Half 1 (August'17-September'17)	**A. *Haematology:*** a) DC of WBC, estimation of haemoglobin, blood group determination, bleeding time and coagulation time, TC of RBC and WBC. *Demonstration:* Haematocrit, MCV, ESR. **B. *Biochemistry:*** a) Identification of normal constituents of urine - chloride. sulphate, phosphate, creatinine and urea. Identification of abnormal constituents of urine - glucose, protein, acetone blood and bile salts. *Demonstration:* Blood sugar estimation (Folin -Wu method)	4 weeks Puja Vacation
Term 1, Half 2 (October'17-December'17)	**C. *Human Experiments:*** a)Determination of Physical Fitness Index (PFI) of an individual by modified Harvard step test and recording of recovery heart-rate after standard exercise. b)Pneumographic recording of respiratory movements along with the effect of drinking of water, talking, forced hyperventilation and breath holding.	Annual Sports & 1 week Winter Recess

Term 2, Half 1 (January'18-March'18)	c)Measurement of some common anthropometric parameters : stature, weight, eye height, shoulder height, elbow height. sitting height, elbow rest height (sitting), knee height (sitting), arm reach from wall, mid-arm circumference, waist circumference, hip circumference, neck circumference, head circumference, chest circumference. d) Calculation of Body Surface Area (using a nomogram) and Body Mass Index from anthropometric measurements. *Demonstration:* a) Tests for colour blindness, test for visual acuity using Snellen's Chart. Exploration of conductive and perceptive deafness by tuning for method. b) Ergographic recording of muscular fatigue by' Moss's ergograph. Clinical classification of reflexes : superficial reflex - planter reflex, Deep reflex – knee jerk, Visceral reflex - pupillary light reflex. ***D. Field Study Report:*** Diet survey of a family as per ICMR specification. OR Population study of physiological parameters such as height, weight, heart-rate, blood pressure, respiratory rate, PFI, TC of RBC, estimation of haemoglobin, DC of WBC as far as practicable.	3rd Year Test Exam 2nd Year Test Exam
Term 2, Half 2 (April'18-June'18)	Revision Classes	1st Year Test Exam

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ACADEMIC CALENDER
SUBJECT- PHYSIOLOGY GENERAL
SESSION- 2018-2019

CBCS SEMESTER I

SEMESTER	***PAPERCODE***	***SYLLABUS/MODULE***	***NO. OF HOURS***	***TEACHER***	***DISTRIBUTION***
I	*PHYGCOR01T*	*Chemistry of Biomolecules* *Nutrition, Vitamins,Minerals, Gastrointestinal Hormones*	*14* *10*	*MS*	*July''18-August'18*
I	*PHYGCOR01T*	*Enzymes* *Digestion and Absorption*	*6* *10*	*MS*	*September'18-October'18*
I	*PHYGCOR01T*	*Carbohydrate, Protein and Fat Metabolism* *Regulation of Gastrointestinal Functions* *Theory Internal Assessment*	*10* *10* 1	*MS*	*November'18 to December'18*

I	*PHYGCOR01 P*	*Biological Chemistry*	*30*	*MS*	*July'18- September'18*
I	*PHYGCOR01 P*	*Biochemical Estimation* *Practical Internal Assessment*	*30* *1*	*MS*	*October'18 to December'18* *December'18*

CBCS SEMESTER II

II	PHYGCOR02 T	Circulation	25	MS	January'19- February'19
II	PHYGCOR02 T	Respiration & Excretion Theory Internal Assessment	20 15 1	MS MS MS	March'19 April'19 to May'19 June'19
II	PHYGCOR02 P	Sphygmomanometric measurement of arterial blood pressure at rest and after exercise. Modified Harvard Step Test and	15 15	MS MS	January'19 to February'19

		Determination of Physical Fitness			
II	PHYGCOR02P	Recording of Recovery Heart Rate after Standard Exercise. Practical Revision Practical Internal Assessment	15 15 1	MS MS MS	March'19 to April'19 May'19 June'19

PART-II **PAPER- II (THEORETICAL); F.M.-100**		
SESSION	**TOPIC**	**REMARKS**
Term 1, Half 1 (July'18 to September'18)	**1. Endocrine System I:** Anatomy of endocrine system. Hormones - classification. Basic concept of regulation of hormone actions. Positive and negative feedback mechanism. Elementary idea of hormone action. *Hypothalamus :* Basic concept of neurohormone. Hypothalamo-hypophyseal tract and portal system. *Pituitary:* Histological structure, hormones, functions. Hypo and hyperactive states of pituitary gland. *Thyroid:* Histological structure. Functions of thyroid hormones (T4T3) Thyrocalcitonin. Hypo and hyper-active states of thyroid. *Parathyroid:* Histological structure, functions of parathyroid hormone. Tetany. **2. Endocrine System II:** *Adrenal Cortex:* Histological structure and functions of different hormones. Hypo and hyper-active states of adrenal cortex. *Adrenal Medulla:* Histological structure and functions of medullary hormones. The relation of adrenal medulla with the sympathetic nervous system. *Pancreas:* Histology of islets of Langerhans. Origin and functions of pancreatic hormones. Diabetes mellitus. Brief idea of the origin and functions of renin-	4 weeks Puja Vacation

	angiotensin, prostaglandins. erythropoietin and melatonin. Elementary idea of gastrointestinal hormone. **3.Reproductive Physiology I:**Primary and accessory sex organs and secondary sex characters. Testis: histology, spermatogenesis, testicular hormones and their functions. Ovary: histology, oogenesis, ovarian hormones and their functions. **4.Reproductive Physiology II:**Oestrus and menstrual cycles and their hormonal control. Fertilization, implantation and structure and functions of placenta. Maintenance of pregnancy – role of hormones. Development of mammary gland and lactation - role of hormones.	
Term 1, Half 2 (October'18 to December'18)	**5. Skin and Regulation of Body Temperature:** Structure and functions of skin. Insensible and sensible perspiration Regulation of body temperature -- physical and physiological processes involved in it. Physiology of sweat secretion and its regulation. of extreme temperature on humans. **6. Muscle Physiology :** Different types of muscle and their structure. Red and white muscle. Muscular contraction: structural, mechanical and chemical changes in skeletal muscle during contraction and relaxation. Isotonic and isometric contractions. Properties of muscle: all or none law, beneficial effect, summation. refractory period, tetanus, fatigue. A brief idea about the muscle spindle. **7. Nerve Physiology :** Structure and classification of nerves. Origin and propagation of nerve impulse. Velocity of impulse in different types of nerve fiber. Properties of nerve fibers: all or none law, rheobase and chronaxie, refractory period. indefatiguability. Synapses: structure, different types, mechanism of synaptic transmission. Motor unit. Myoneural junction: structure, mechanism of impulse transmission. Degeneration and regeneration in nerve fibers.	Annual Sports & 1 week Winter Recess
Term 2, Half 1 (January'19	**8. Sensory Physiology :** Classification of general and special senses and their	3rd Year Test Exam

to March'19)	receptors. Receptors as biological transducer. (a) *Olfaction and Gustation:* Structure of sensory organ, neural pathway of olfactory and gustatory sensation. Physiology of olfactory and gustatory sensation. Olfactory and gustatory adaptation. After-taste. (b) *Audition:* Structure of ear, auditory pathway, mechanism of hearing. (c) *Vision:* Structure of the eye. Histology of retina. Visual pathway. Light reflex. Chemical changes in retina on exposure to light. Accommodation - mechanism and pathway. Errors of refraction. Positive and negative after-image. Light and dark adaptation. Elementary idea of colour vision and colour blindness. **9. Nervous System I :** A Brief outline of nervous system: CNS & PNS; Anatomy of Brain. A brief outline of organization and basic functions (sensory, motor and association) of the nervous system, central and peripheral nervous system. (emphasis on the structure of spinal cord and brain stem). Ascending tracts carrying touch, kinaesthetic, temperature and pain sensations. Descending tracts: pyramidal tract and brief outline of the extra-pyramidal tracts. Pain. Reflex action - definition, reflex arc, classification, properties. Functions of the spinal cord. Outline of functions of brain stem. **10. Nervous System II :** A brief idea of the structure, connections and functions of cerebellum. Different nuclei and functions of thalamus and hypothalamus. Cerebral cortex: histological structure and localization of functions. CSF : composition, formation, circulation and functions. A brief description of the organization of the autonomic (sympathetic and parasympathetic) nervous system. Functions of sympathetic and parasympathetic nervous system. A brief idea of speech, aphasia, conditioning, learning and memory.	2nd Year Test Exam

Term 2, Half 2 (April'19 to June'19)	Revision Classes	

PART I + PART II
PAPER- III (PRACTICAL); F.M.-100

IIND YEAR (PART II)		
SESSION	**TOPIC**	**REMARKS**
Term 1, Half 1 (July'18-September'18)	***ii) Haematological experiments :*** a) Leishman's staining of human blood film and identification of different types of blood corpuscles. b) Preparation of Haemin crystals.	4 weeks Puja Vacation
Term 1, Half 2 (October'18-December'18)	***iii) Fresh tissue experiments:*** a) Examination and staining of fresh tissues (other than blood) squamous, cornified, ciliated and columnar epithelium, skeletal muscle, cardiac muscle by methylene blue stain. b) Silver nitrate preparation of node of Ranvier. ***iv) Demonstration:*** Staining of adipose tissue by Sudan III or IV.	Annual Sports & 1 week Winter Recess
Term 2, Half 1 (January'19-March'19)	**3. Experimental Physiology with Human Experiment :** ***i) Measurement of systolic and diastolic arterial pressure by sphygmomanometer and determination of pulse pressure and mean pressure during rest and exercise.*** ***ii)Use of kymograph, induction coil and key.*** ***iii) Normal tracing of toad's unperfused heart beat*** **.** ***iv) Effect of warm saline on toad's unperfused heart beat***.	3rd Year Test Exam 2nd Year Test Exam

	v)Demonstration : a)Recording of simple muscle curve with sciatic-gastrocnemius muscle preparation of toad and determination of latent period, period of contraction and period of relaxation and maximum height of contraction. b) Effect of temperature on simple muscle twitch. c) Effect of calcium and potassium ions on unperfused toad's heart beat. d) Effect of adrenaline/acetylcholine on unperfused toad's heart beat.	
Term 2, Half 2 (April'19-June'19)	Revision Classes	

PART-III
PAPER- IVA (THEORETICAL); F.M.-50

SESSION	TOPIC	REMARKS
Term 1, Half 1 (August'18-September'18)	**1. Haematology :** Blood groups - ABO and Rh. Blood transfusion - precaution and hazards. Immunological basis of identification of ABO and Rh blood groups. Functions and estimation of haemoglobin. Abnormal haemoglobins - thalassaemia and sickle-cell anaemia. Definition, determination and significance of TC, DC, ESR, Arneth count, PCV, MCV, MHC, MCHC, bleeding time, clotting time and prothrombin time. Anaemia - types (definition and causes). Leucocytosis, leucopenia and leukaemia. Purpura. **2. Biochemistry and Molecular Biology:** Brief idea of HMP shunt and its significance (detailed enzymatic reactions are not required). Purine and pyrimidine bases, nucleosides, nucleotides and polynucleotides. Structure of DNA and RNA. Elementary idea of gene, genome, transcription, genetic code, translation and genetic engineering. Application of PCR and western blot and diagnosis. Pathophysiological significance of the following blood constituents: glucose, urea, creatinine, uric acid, cholesterol, bilirubin, SGPT and SGOT, alkaline and acid phosphatases and ketone bodies.	4 weeks Puja Vacation

	3. Microbiology and Immunology: Virus - DNA virus and RNA virus. Bacteriophage. Bacteria-structure and morphological classification. Gram positive and Gram negative and acid-fast bacteria. Pathogenic and non-pathogenic bacteria - definition with a few examples. Sterilization and Pasteurization. A brief idea of antibiotics. Elementary knowledge of innate and acquired immunity. Humoral and cell mediated immunity Vaccination - principles and importance of immunization. Basic principle of immunological detection of pregnancy.	
Term 1, Half 2 (October'18-December'18)	**4. Community Health and Management:** Principle of balanced diet formulation of individuals - infants, growing children, students, pregnant women, lactating women and aged persons. Antioxidants and Aging. Some common pollutants and their effects - carbon monoxide, lead and arsenic. Effects of noise on human body and preventive measures. Role of physiologist in community health. Etiology, Pathophysiology and Management of: Anaemia, Iodine deficiency, Hypothyroidism and Hyperthyroidism, Obesity, Polycystic ovary, Recurrent spontaneous abortion, Diabetes, Hypertension, Atherosclerosis, Gout, Arthritis, Ventricular Hypertrophy, Marasmus, Kwashiorkor, Vit A, Iron and iodine deficiency, Alzheimer's disease, Dementia, Depression & Anxiety disorder, Stroke, Migraine, Asthma, Chronic Obstructive Pulmonary Disease (COPD), Tuberculosis, Diarrhoea, Dysentry, Giardiasis, Ulcer, Typhoid fever, Malaria, Influenza, Common cough and cold. Myopia, Hypermetropia, Cataract, Macular degeneration, Glaucoma, Osteoporosis & Hormone replacement therapy, Eczema. Pharmacodynamics and Pharmacokinetics (definition	Annual Sports & 1 week Winter Recess

	only), Dose and mechanism of action of different drugs in the management of above mentioned diseases.	
Term 2, Half 1 (January'19-March'19)	**5. Biostatistics :** Basic concepts – variable, population, parameter, sample, statistic. Classification of data – qualitative and quantitative, continuous and discontinuous. Presentation of data– frequency distribution, bar diagram, pie diagram, frequency polygon and histogram. Mean, median, mode, standard deviation and standard error.	3rd Year Test Exam 2nd Year Test Exam
Term 2, Half 2 (April'19-June'19)	Revision Classes	

PART-III **PAPER- IVB (PRACTICAL); F.M.-50**		
SESSION	**TOPIC**	**REMARKS**
Term 1, Half 1 (August'18-September'18)	**A. *Haematology:*** a) DC of WBC, estimation of haemoglobin, blood group determination, bleeding time and coagulation time, TC of RBC and WBC. *Demonstration:* Haematocrit, MCV, ESR. **B. *Biochemistry:*** a) Identification of normal constituents of urine - chloride. sulphate, phosphate, creatinine and urea. Identification of abnormal constituents of urine - glucose, protein, acetone blood and bile salts. *Demonstration:* Blood sugar estimation (Folin -Wu method)	4 weeks Puja Vacation

Term 1, Half 2 (October'18-December'18)	**C. *Human Experiments:*** a)Determination of Physical Fitness Index (PFI) of an individual by modified Harvard step test and recording of recovery heart-rate after standard exercise. b)Pneumographic recording of respiratory movements along with the effect of drinking of water, talking, forced hyperventilation and breath holding.	Annual Sports & 1 week Winter Recess
Term 2, Half 1 (January'19-March'19)	c)Measurement of some common anthropometric parameters : stature, weight, eye height, shoulder height, elbow height. sitting height, elbow rest height (sitting), knee height (sitting), arm reach from wall, mid-arm circumference, waist circumference, hip circumference, neck circumference, head circumference, chest circumference. d) Calculation of Body Surface Area (using a nomogram) and Body Mass Index from anthropometric measurements. *Demonstration:* a) Tests for colour blindness, test for visual acuity using Snellen's Chart. Exploration of conductive and perceptive deafness by tuning for method. b) Ergographic recording of muscular fatigue by' Moss's ergograph. Clinical classification of reflexes : superficial reflex - planter reflex, Deep reflex – knee jerk, Visceral reflex - pupillary light reflex. ***D. Field Study Report:*** Diet survey of a family as per ICMR specification. OR Population study of physiological parameters such as height, weight, heart-rate, blood pressure, respiratory rate, PFI, TC of RBC, estimation of haemoglobin, DC of WBC as far as practicable.	3rd Year Test Exam 2nd Year Test Exam

Term 2, Half 2 (April'19-June'19)	Revision Classes	

HIRALAL MAZUMDAR MEMORIAL COLLEGE FOR WOMEN

DAKSHINESWAR, KOLKATA – 700 035 ★ TEL: 2564 5148

ACADEMIC CALENDER
SUBJECT- PHYSIOLOGY GENERAL
SESSION- 2019-2020

CBCS SEMESTER I

SEMESTER	PAPERCODE	SYLLABUS/MODULE	NO. OF HOURS	TEACHER	DISTRIBUTION
I	*PHYGCOR01T*	*Chemistry of Biomolecules* *Nutrition, Vitamins,Minerals, Gastrointestinal Hormones*	*14* *10*	DM *MS*	*July''19-August'19*
I	*PHYGCOR01T*	*Enzymes* *Digestion and Absorption*	*6* *10*	*DM* *MS*	*September'19-October'19*
I	*PHYGCOR01T*	*Carbohydrate, Protein and Fat Metabolism* *Regulation of Gastrointestinal Functions* *Theory Internal Assessment*	*10* *10* 1	*DM* *MS*	*November'19 to December'19*

I	*PHYGCOR01P*	*Biological Chemistry*	*30*	*MS*	*July'19-September'19*
I	*PHYGCOR01P*	*Biochemical Estimation* *Practical Internal Assessment*	*30* *1*	*MS*	*October'19 to December'19* *December'19*

CBCS SEMESTER II

SEMESTER	PAPERCODE	SYLLABUS/MODULE	NO. OF HOURS	TEACHER	DISTRIBUTION
II	PHYGCOR02T	Circulation	25	MS	January'20-February'20
II	PHYGCOR02T	Respiration & Excretion Theory Internal Assessment	20 15 1	MS MS MS	March'20 April'20 to May'20 June'20
II	PHYGCOR02P	Sphygmomanometric measurement of arterial blood pressure at rest and after exercise. Modified Harvard	15 15	MS MS	January'20 to February'20

		Step Test and Determination of Physical Fitness			
II	PHYGCOR02P	Recording of Recovery Heart Rate after Standard Exercise. Practical Revision Practical Internal Assessment	15 15 1	MS MS MS	March'20 to April'20 May'20 June'20

CBCS SEMESTER III

SEMESTER	***PAPERCODE***	***SYLLABUS/MODULE***	***NO. OF HOURS***	***TEACHER***	***DISTRIBUTION***
III	*PHYGCOR03T*	*Nerve & Muscle*	*20*	*MS*	*July '19 to August'19*
III	*PHYGCOR03T*	*Special Senses*	*15*	*MS*	*September'' 19 to October''19*
III	*PHYGCOR03T*	*Nervous System*	*25*	*MS*	*November'19 to December'19*
III	*PHYGCOR03P*	*Identification of Skeletal Muscle, Cardiac Muscle and SmoothMuscle*	*15*	*MS*	*July'19 to August'19*
III	*PHYGCOR03P*	*Determination of ColourVision*	*15*	*MS*	*September'19to October'19*
III	*PHYGCOR03P*	*Determination of Visual Acuity*	*15*	*MS*	*November'19*

III	*PHYGCOR03 P*	*Measurement of Grip Strength*	*15*	*MS*	*December'19*

CBCS SEMESTER IV

SEMESTER	PAPERCODE	SYLLABUS/MODULE	NO. OF HOURS	TEACHER	DISTRIBUTION
IV	PHYGCOR04 T PHYGCOR04 P	Endocrinology Reproduction Identification of Stained Sections of Different Mammalian Tissues & Organs	15 15 30	MS M.Sinha MS	January'20 to February'20
IV	PHYGCOR04 T PHYGCOR04 P	Endocrinology Reproduction Identification of Stained Sections of Different Mammalian Tissues & Organs Theory & Practical Internal Assessment	15 15 30 2	MS M.Sinha MS MS	March'20 to May'20 June'20

PART-III PAPER- IVA (THEORETICAL); F.M.-50		
SESSION	**TOPIC**	**REMARKS**
Term 1, Half 1 (August'19-September'19)	**1. Haematology :** Blood groups - ABO and Rh. Blood transfusion - precaution and hazards. Immunological basis of identification of ABO and Rh blood groups. Functions and estimation of haemoglobin. Abnormal haemoglobins - thalassaemia and sickle-cell anaemia. Definition, determination and significance of TC, DC, ESR, Arneth count, PCV, MCV, MHC, MCHC, bleeding time, clotting time and prothrombin time. Anaemia - types (definition and causes). Leucocytosis, leucopenia and leukaemia. Purpura. **2. Biochemistry and Molecular Biology:** Brief idea of HMP shunt and its significance (detailed enzymatic reactions are not required). Purine and pyrimidine bases, nucleosides, nucleotides and polynucleotides. Structure of DNA and RNA. Elementary idea of gene, genome, transcription, genetic code, translation and genetic engineering. Application of PCR and western blot and diagnosis. Pathophysiological significance of the following blood constituents: glucose, urea, creatinine, uric acid, cholesterol, bilirubin, SGPT and SGOT, alkaline and acid	4 weeks Puja Vacation

	phosphatases and ketone bodies. **3. Microbiology and Immunology:** Virus - DNA virus and RNA virus. Bacteriophage. Bacteria-structure and morphological classification. Gram positive and Gram negative and acid-fast bacteria. Pathogenic and non-pathogenic bacteria - definition with a few examples. Sterilization and Pasteurization. A brief idea of antibiotics. Elementary knowledge of innate and acquired immunity. Humoral and cell mediated immunity Vaccination - principles and importance of immunization. Basic principle of immunological detection of pregnancy.	
Term 1, Half 2 (October'19-December'19)	**4. Community Health and Management:** Principle of balanced diet formulation of individuals - infants, growing children, students, pregnant women, lactating women and aged persons. Antioxidants and Aging. Some common pollutants and their effects - carbon monoxide, lead and arsenic. Effects of noise on human body and preventive measures. Role of physiologist in community health. Etiology, Pathophysiology and Management of: Anaemia, Iodine deficiency, Hypothyroidism and Hyperthyroidism, Obesity, Polycystic ovary, Recurrent spontaneous abortion, Diabetes, Hypertension, Atherosclerosis, Gout, Arthritis, Ventricular Hypertrophy, Marasmus, Kwashiorkor, Vit A, Iron and iodine deficiency, Alzheimer's disease, Dementia, Depression & Anxiety disorder, Stroke, Migraine, Asthma, Chronic Obstructive Pulmonary Disease (COPD), Tuberculosis, Diarrhoea, Dysentry, Giardiasis, Ulcer, Typhoid fever, Malaria, Influenza, Common cough and cold. Myopia, Hypermetropia, Cataract, Macular degeneration, Glaucoma, Osteoporosis & Hormone replacement therapy, Eczema.	Annual Sports & 1 week Winter Recess

	Pharmacodynamics and Pharmacokinetics (definition only), Dose and mechanism of action of different drugs in the management of above mentioned diseases.	
Term 2, Half 1 (January'20-March'20)	**5. Biostatistics :** Basic concepts – variable, population, parameter, sample, statistic. Classification of data – qualitative and quantitative, continuous and discontinuous. Presentation of data– frequency distribution, bar diagram, pie diagram, frequency polygon and histogram. Mean, median, mode, standard deviation and standard error.	3rd Year Test Exam 2nd Year Test Exam
Term 2, Half 2 (April'20-June'20)	Revision Classes	

PART-III **PAPER- IVB (PRACTICAL); F.M.-50**		
SESSION	**TOPIC**	**REMARKS**
Term 1, Half 1 (August'19-September'19)	**A. *Haematology:*** a) DC of WBC, estimation of haemoglobin, blood group determination, bleeding time and coagulation time, TC of RBC and WBC. *Demonstration:* Haematocrit, MCV, ESR. **B. *Biochemistry:*** a) Identification of normal constituents of urine - chloride. sulphate, phosphate, creatinine and urea. Identification of abnormal constituents of urine - glucose, protein, acetone blood and bile salts. *Demonstration:* Blood sugar estimation (Folin -Wu method)	4 weeks Puja Vacation

Term 1, Half 2 (October'19-December'19)	**C. *Human Experiments:*** a)Determination of Physical Fitness Index (PFI) of an individual by modified Harvard step test and recording of recovery heart-rate after standard exercise. b)Pneumographic recording of respiratory movements along with the effect of drinking of water, talking, forced hyperventilation and breath holding.	Annual Sports & 1 week Winter Recess
Term 2, Half 1 (January'20-March'20)	c)Measurement of some common anthropometric parameters : stature, weight, eye height, shoulder height, elbow height. sitting height, elbow rest height (sitting), knee height (sitting), arm reach from wall, mid-arm circumference, waist circumference, hip circumference, neck circumference, head circumference, chest circumference. d) Calculation of Body Surface Area (using a nomogram) and Body Mass Index from anthropometric measurements. *Demonstration:* a) Tests for colour blindness, test for visual acuity using Snellen's Chart. Exploration of conductive and perceptive deafness by tuning for method. b) Ergographic recording of muscular fatigue by' Moss's ergograph. Clinical classification of reflexes : superficial reflex - planter reflex, Deep reflex – knee jerk, Visceral reflex - pupillary light reflex. ***D. Field Study Report:*** Diet survey of a family as per ICMR specification. OR Population study of physiological parameters such as height, weight, heart-rate, blood pressure, respiratory rate, PFI, TC of RBC, estimation of haemoglobin, DC of WBC as far as practicable.	3rd Year Test Exam 2nd Year Test Exam

Term 2, Half 2 (April'20-June'20)	Revision Classes	

HIRALAL MAZUMDAR MEMORIAL COLLEGE FOR WOMEN

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ACADEMIC CALENDER
SUBJECT- PHYSIOLOGY GENERAL (GE/DSC)
SESSION- 2020-2021

SEMESTER	PAPERCODE	SYLLABUS/MODULE	NO. OF HOURS	TEACHER	DISTRIBUTION
I	PHYGCOR01T	Chemistry of Biomolecules Nutrition, Vitamins,Minerals, Gastrointestinal Hormones	14 10	DM MS	December '20 to January'21
I	PHYGCOR01T	Enzymes Digestion and Absorption	6 10	DM MS	February'21
I	PHYGCOR01T	Carbohydrate, Protein and Fat Metabolism Regulation of Gastrointestinal Functions Theory Internal Assessment	10 10 1	DM MS MS	March'21
I	PHYGCOR01P	Biological Chemistry	30	MS	December'20 to January'21
I	PHYGCOR01P	Biochemical Estimation Practical Internal	30 1	MS MS	February '21 to March'21 March'21

		Assessment			
III	*PHYGCOR03 T*	*Nerve & Muscle*	*20*	*MS*	*July '20 to August'20*
III	*PHYGCOR03 T*	*Special Senses*	*15*	*MS*	*September'2 0 to October'20*
III	*PHYGCOR03 T*	*Nervous System*	*25*	*MS*	*November'2 0 to January'21*
III	*PHYGCOR03 P*	*Identification of Skeletal Muscle, Cardiac Muscle and SmoothMuscle*	*15*	*MS*	*July'20 to August'20*
III	*PHYGCOR03 P*	*Determination of ColourVision*	*15*	*MS*	*September'2 0 to October'20*
III	*PHYGCOR03 P*	*Determination of Visual Acuity*	*15*	*MS*	*November'2 0 to December'2 0*
III	*PHYGCOR03 P*	*Measurement of Grip Strength*	*15*	*MS*	*January'21*
V	*PHYGDSE02 T*	*Importance of Regular Exercise in health and wellbeing* *Basic concept ofvBioenergetic s* *Energy sources during exercise* *Cardiorespiratory responses during different grades of exercise*	*15*	*MS*	*July'20 to August'20*

V	*PHYGDSE02T*	*Concept of EPOC* *Physiological Fatigue and recovery* *Aerobic WorkCapacity*	*15*	*MS*	*September'20 to October'20*
V	PHYGDSE02T	Principles of Physical Training Training to improve aerobic and anaerobic power Effect of Overtraining and Detraining	15	MS	November'20 to December'20
V	PHYGDSE02T	Nutritional Supplements and Ergogenic Aids Sports Injury and its Management Basic idea of Sports rehabilitation and Sports Medicine	15	MS	January'21
V	PHYGDSE02P	Measurement of blood pressure before and after Exercise. Recording of Recovery Pulse Rate after Standard Exercise	15	MS	July'20 to August'20
V	PHYGDSE02P	Queen's College Step Test Six Minutes Walk Test	15	MS	September'20 to October'20

V	PHYGDSE02P	Measurement of Body Fat Percentage	15	MS	November'20 to December'20
V	*PHYGDSE02P*	*Determination of Endurance Time by Handgrip Dynamometer*	*15*	*MS*	*January'21*
III V	PHYGCOR03T PHYGCOR03P PHYGDSE02T PHYGDSE02P	REVISION & INTERNAL ASSESSMENT	15 15	MS	February'21
I, III, V	PHYGCOR01T PHYGCOR01P PHYGCOR03T PHYGCOR03P PHYGDSE02T PHYGDSE02P	WBSU EXAM	-	-	March'21 to April'21
II	PHYGCOR02T	Circulation	25	MS	May'21
II	PHYGCOR02T	Respiration & Excretion Theory Internal Assessment	20 15 1	MS MS	June'21 June'21
II	PHYGCOR02P	Sphygmomanometric measurement of arterial blood pressure at rest and after exercise. Modified Harvard Step Test and	 15	 MS	 May'21

		Determination of Physical Fitness			
II	PHYGCOR02P	Recording of Recovery Heart Rate after Standard Exercise. Practical Internal Assessment	15 1	MS MS	June'21
IV	PHYGCOR04T PHYGCOR04P	Endocrinology Reproduction Identification of Stained Sections of Different Mammalian Tissues & Organs	15 15 30	MS M.Sinha MS	May'21
IV	PHYGCOR04T PHYGCOR04P	Endocrinology Reproduction Identification of Stained Sections of Different Mammalian Tissues & Organs Theory & Practical Internal Assessment	15 15 30 2	MS M.Sinha MS MS	June'21
VI	PHYGDSE03T	Nutritional Classification, Digestive Absorption, Metabolism of Carbohydrates, Proteins, Lipids. Sound Pollution	10	DM	May'21

		as a community health issue. Principles of Human Nutrtion- Relationship between Nutrition, Health & Disease. Recommended Dietary Allowances, Malnutrtion & Chronic Energy, LBW, PEM, Xerophthalmia, IDD, Iron & Iodine Deficiency, Micronutrient Disorders. Food Toxicity, Effect of Processing on Nutritive value of foods. Balanced Diet, Diet Survey, Concept of ACU. Composition & Nutritional Value of Common Indian Foodstuff- Rice, wheat, pulses, egg, meat, fish, milk, Dietary Fibres, Calorie Requirement Principles of Formulation of Balanced diets	10 10	M.Sinha MS	May'21 May'21

		for growing child, adult man & woman, pregnant and lactating woman			
VI	PHYGDSE03T	Definition, Concept of Noise. Source if Extraordinary Sound. Effects of Sound Pollution on Human Health, Noise Index (Noise Standard). Socioecology of Nutrition. Habitual diets in India & their adequacy. Basic idea about community health and public health issues. Diet Management of Obese, Diabetic, Hypertensive Person and Athlete. Badic Idea on PCM, Marasmus, Kwashiorkor and their prevention.	10 10 10 1	DM M.Sinha MS MS	June'21 June'21 June'21

		Theory Internal Assessment			
VI	PHYGDSE03P	Diet Survey	30	MS	May'21
VI	PHYGDSE03P	Qualitative Assessment of Noise. Practical Internal Assessment	30 1	DM MS	June'21

ACADEMIC CALENDAR SUBJECT- PHYSIOLOGY GENERAL (GE/DSC) SESSION- 2021-2022						
SEMESTER	***GENERAL (PAPERCODE)***	***SYLLABUS MODULE / UNIT***	***NO. OF HOURS***	***TEACHER***	***DISTRIBUTION***	**PROJECT/ STUDENT SEMINAR (IF ANY)**
I	*PHYGCOR01T*	*Chemistry of Biomolecules* *Nutrition, Vitamins,Minerals, Gastrointestinal Hormones*	*14* *10*	*DM* *MS*	*October'21*	
I	*PHYGCOR01T*	*Enzymes* *Digestion and Absorption*	*6* *10*	*DM* *MS*	*November'21*	
I	*PHYGCOR01T*	*Carbohydrate, Protein and Fat Metabolism* *Regulation of Gastrointestinal Functions* *Theory Internal Assessment*	*10* *10* 1	*DM* *MS* MS	*December'21*	
I	*PHYGCOR01P*	*Biological Chemistry*	*30*	*MS*	*October'21 to November '21*	

I	*PHYGCOR01P*	*Biochemical Estimation* *Practical Internal Assessment*	*30* *1*	*MS*	*December '21 to January'22* *January'22*	
III	*PHYGCOR03T*	*Nerve & Muscle*	*20*	*MS*	*September'21*	
III	*PHYGCOR03T*	*Special Senses*	*15*	*MS*	*October'21*	
III	*PHYGCOR03T*	*Nervous System* *Theory Internal Assessment*	*25* *1*	*MS* *MS*	*November' 21 to December' 21* *December'21*	POSTER/ PPT
III	*PHYGCOR03P*	*Identification of Skeletal Muscle, Cardiac Muscle and SmoothMuscle*	*15*	*MS*	*September'21*	
III	*PHYGCOR03P*	*Determination of ColourVision*	*15*	*MS*	*October'21*	
III	*PHYGCOR03P*	*Determination of Visual Acuity*	*15*	*MS*	*November'21*	
III	*PHYGCOR03P*	*Measurement of Grip Strength* *Practical Internal Assessment*	*15* *1*	*MS* *MS*	*December'21*	

V	*PHYGDSE02T*	*Importance of Regular Exercise in health and wellbeing* *Basic concept of Bioenergetics* *Energy sources during exercise* *Cardiorespiratory responses during different grades of exercise*	*15*	*MS*	*September'21*	
V	*PHYGDSE02T*	*Concept of EPOC* *PhysiologicalFatigue and recovery* *Aerobic WorkCapacity*	*15*	*MS*	*October'21*	
V	PHYGDSE02T	Principles of Physical Training Training to improve aerobic and anaerobic power Effect of Overtraining and Detraining	15	MS	November'21	POSTER / PPT
V	PHYGDSE02T	Nutritional Supplements and Ergogenic Aids Sports Injury and its Management Basic idea of Sports rehabilitation and Sports Medicine Theory Internal Assessment	15 1	MS MS	December'21	

V	PHYGDSE02P	Measurement of blood pressure before and after Exercise. Recording of Recovery Pulse Rate after Standard Exercise	15	MS	September'21	
V	PHYGDSE02P	Queen's College Step Test Six Minutes Walk Test	15	MS	October'21	
V	PHYGDSE02P	Measurement of Body Fat Percentage	15	MS	November'21	
V	*PHYGDSE02P*	*Determination of Endurance Time by Handgrip Dynamometer* *Practical Internal Assessment*	*15* *1*	*MS* *MS*	*December'21* *December'21*	
I, III, V	PHYGCOR01T PHYGCOR01P PHYGCOR03T PHYGCOR03P PHYGDSE02T PHYGDSE02P	WBSU EXAM	-	-	January'22 to February'22	
II	PHYGCOR02T	Circulation	25	MS	March'22	
II	PHYGCOR02T	Respiration & Excretion	20 15	MS	April'22 to May'22	P

		Theory Internal Assessment	1	MS	May'22	
II	PHYGCOR02P	Sphygmomanometric measurement of arterial blood pressure at rest and after exercise. Modified Harvard Step Test and Determination of Physical Fitness	30	MS	March'22 to April'22	
II	PHYGCOR02P	Recording of Recovery Heart Rate after Standard Exercise. Practical Internal Assessment	30 1	MS MS	May'22 to June'22 June'22	
IV	PHYGCOR04T PHYGCOR04P	Endocrinology Reproduction Identification of Stained Sections of Different Mammalian Tissues & Organs	15 15 30	MS M.Sinha MS	March'22 March'22 to April'22	
IV	PHYGCOR04T PHYGCOR04P	Endocrinology Reproduction Identification of Stained Sections of Different Mammalian Tissues & Organs Theory & Practical Internal Assessment	15 15 30 2	MS M.Sinha MS MS	April'22 to May '22 May'22 to June'22 June'22	

VI	PHYGDSE03T	Nutritional Classification, Digestive Absorption, Metabolism of Carbohydrates, Proteins, Lipids. Sound Pollution as a community health issue. Principles of Human Nutrtion- Relationship between Nutrition, Health & Disease. Recommended Dietary Allowances, Malnutrtion & Chronic Energy, LBW, PEM, Xerophthalmia, IDD, Iron & Iodine Deficiency, Micronutrient Disorders. Food Toxicity, Effect of Processing on Nutritive value of foods. Balanced Diet, Diet Survey, Concept of ACU. Composition & Nutritional Value of Common Indian Foodstuff- Rice, wheat, pulses, egg, meat, fish, milk, Dietary Fibres, Calorie Requirement Principles of Formulation of	10 10	DM M.Sinha	March'22 March'22 March'22	

		Balanced diets for growing child, adult man & woman, pregnant and lactating woman	10	MS		
VI	PHYGDSE03T	Definition, Concept of Noise. Source if Extraordinary Sound. Effects of Sound Pollution on Human Health, Noise Index (Noise Standard). Socioecology of Nutrition. Habitual diets in India & their adequacy. Basic idea about community health and public health issues. Diet Management of Obese, Diabetic, Hypertensive Person and Athlete. Badic Idea on PCM, Marasmus, Kwashiorkor and their prevention. Theory Internal Assessment	10 10 10 1	DM M.Sinha MS MS	April'22 to May'22 April'22 to May'22 April'22 to May'22 May'22	

VI	PHYGDSE03P	Diet Survey	30	MS	March'22 to April'22	
VI	PHYGDSE03P	Qualitative Assessment of Noise. Practical Internal Assessment	30 1	DM MS	May'22 to June'22 June'22	
II, IV, VI	PHYGCOR02T PHYGCOR02P PHYGCOR04T PHYGCOR04P PHYGDSE03T PHYGDSE03P	WBSU EXAM			June'22	

Semester	**(Hons /General)**	**Internal Assessment(Tentative time)**	**University Examination**
I	GENERAL	DECEMBER'21 (THEORY) JANUARY'22 (PRACTICAL)	JANUARY'22 TO FEBRUARY'22
III	GENERAL	DECEMBER'21 (THEORY& PRACTICAL)	
V	GENERAL	DECEMBER'21 (THEORY& PRACTICAL)	
II	GENERAL	MAY'22 (THEORY) JUNE'22 (PRACTICAL)	JUNE'22
IV	GENERAL	JUNE'22 (THEORY & PRACTICAL)	
VI	GENERAL	MAY'22 (THEORY) JUNE'22 (PRACTICAL)	