

1st YEAR
Semester-I
Paper-1A- (Theory)
HP-101M

Full marks-75 (Internal assessment-30; End Sem. Exam. - 45)

Unit-1: Structural and Functional basis of Human Body

1. General structure and function of eukaryotic cell, Cell->tissue->organ->system concept.
2. Different types of human tissues-Functions.
3. Musculo-skeletal system: Types of muscle, Bone, Cartilage & ligament. Joints types-functions.
4. General idea about functional aspect of human body organ and organ systems.

Unit-2: Biophysics and Physicochemical Principles

1. Diffusion, Osmosis, Osmotic pressure. Tonicity-isotonic, hypertonic, hypotonic.
2. Basic idea about cell membrane transport: Passive transport-ligand and voltage gated ion channel transport, facilitated diffusion. Active transport, secondary active transport.
3. Gibbs-Donnan membrane equilibrium- its biological application.
4. Acids, bases, pH and Buffers: Definition, biological significance. Henderson-Hasselbalch equation. Important Buffers in the Body.

Unit-3: Chemistry of Bio molecules

1. Chemistry, classification and physiological importance of carbohydrates. Properties of carbohydrates.
2. Chemistry, classification and physiological importance of Proteins.
3. Chemistry, classification and physiological importance of Lipids & fatty acids. Mono and poly unsaturated fatty acids. Sterols.
4. Enzyme classification. Concept of apoenzyme, holoenzyme, coenzyme, cofactors, isoenzyme. Mechanism of enzyme action- models; activation energy; active site, regulatory site-Allosteric enzyme.

Paper-1B-(Practical)

HP-101M

Full marks-25 (Internal assessment-05; End Sem. Exam. -20)

Sl. No.	Practical	Marks
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1.		
2.		
3		
4.	Laboratory Note book	
5.	<i>Viva voce</i>	
TOTAL		20

CONTENTS:

1. Study of Models / Charts of different body organ systems & organs – Anatomical position, Structure & Functions.
2. Study of Human Skeleton
3. Study of Body Anthropometry- Stature, weight, sitting height, shoulder height (standing), Elbow height (standing), Hip height (standing), hand length, shoulder elbow length, leg length, shoulder breadth (biacromial), Arm reach from wall (Arm span), Knee to Knee Breadth, Elbow to elbow breadth, Head circumference, Shoulder circumference, Chest circumference, waist circumference, hip circumference. Calculation of BMI, BSA, WHR, Head and Chest circumference ratio.

Semester-II

Paper-2A (Theory)

HP- 102M

Full marks-75 (Internal assessment-30; End Sem. Exam. -45)

Unit-1: Physiology of Blood and body fluids-I

1. Composition and general functions of blood. Plasma - Plasma proteins- types and functions.
2. Haematopoiesis. Haemopoietic stem cell, Site of Blood cells Formation. Erythropoiesis –factors effecting. Fate of RBC.
3. Tissue fluid and Lymph- Composition and function.
4. ESR-its importance. Haemoglobin-structure, types. Thalassemia and Haemoglobinopathies- HbS, HbE, HbD.

Unit-2: Physiology of Blood and body fluids-II

1. Blood coagulation : mechanism, role of platelets. Hemophilia, purpura
2. Blood group -ABO, Rh system. Blood transfusion and its hazards.
3. Blood volume- Factor effecting and determination of blood volume.
4. Anaemia-types, leukemia, leukopenia, polycythemia.