CONTENTS:

1. Haematological experiments: Preparation and staining of blood film with Leishman's stain. Identification of blood cells. Total count of W.B.C and R.B.C. Differential count of W.B.C. Haemoglobin estimation by Sahli's hemoglobinometer. Preparation of haemin crystals.
2. Cardiovascular Physiology Experiments: Determination of Blood pressure in different body posture. Determination of pulse rate.
3. InterpretationofKymographicrecordingofthemovementsofperfusedheartoftoadandtheef fectsof Excess Calcium, acetylcholine and adrenaline on the contraction of heart.
4. Respiratory Human Experiments: Pneumographic recording / demonstration of effects of hyperventilation, breath-holding and talking. Interpretation of lung function tests using Spirometry (Digital) and analysis of the results.
5. Determination of Peak Expiratory Flow Rate
6. **Laboratory Records:** Student must get the laboratory note books duly signed by the respective teacher during practical classes.
7. ***Viva voce*:** Questions based on theory and practical syllabus of 3rd semester.

2ND YEAR

SEMESTER-III
HP-201C
Paper- 5 (Theory)
Total Mark = 100 (IA = 40 + ESE = 60) Credit = 04

Unit-I (Enzyme classification and kinetics-I)

1. Classification of enzymes
2. Co enzymes and co factors, prosthetic group
3. Models of enzyme action
4. Multi-enzyme system-example, advantages

Unit-II (Enzyme classification and kinetics-II)

1. Enzyme kinetics: Factors affecting enzyme activity.
2. Michaeles-Menten constant (Km); Lineweaver-Burk plot.
3. Enzyme Inhibition: Type – competitive, non competitive and uncompetitive
4. Feedback and allosteric regulation of enzymes.

Unit-III (Digestion & absorption-I)

1. Anatomy and histology of alimentary tract & digestive glands.
2. Mastication, Deglutition and movements of alimentary canal.
3. Composition, function and regulation of secretion of salivary, gastric, pancreatic and intestinal juice and bile.
4. Formation, secretion and regulation of HCL, concept of hyperacidity, achlorhydria
5. Gastro-intestinal hormones.

Unit-IV (Digestion & absorption-II)

1. Entero-hepatic circulation of bile salt-role of bile indigestion.
2. Digestion and absorption of carbohydrates, proteins and fats.
3. Defecation-mechanism, constipation
4. Basic concept of peptic ulcer, gallstone,
5. Vomiting center and mechanism, anti-vomiting agents and mode of action.

Paper- 6A (Theory)
HP-202C
Total Mark = 50 (IA = 20 + ESE = 30) Credit = 02

Unit-I (Excretory Physiology)

1. Histology, Structural andAnatomyofkidneyandnephron.Renalcirculation–peculiaritiesandauto regulation. Glomerular filtration, GFR, measurements, regulation. Juxtaglomerular apparatus.
2. Tubular reabsorption and secretion
3. Formation of hypotonic and hypertonic urine-counter current mechanism.
4. Renal regulation of osmolarity and blood volume, Renal regulation of acid-base balance,
5. Physiology of urinary bladder and micturition. Abnormalities of micturition. Renal function tests. diuretics.

Unit-II (Skin and body temperature regulation)

1. Histology and functions of skin.
2. Skin wounds, classification and phases and mechanisms of wound healing.
3. Sweat glands–structure and composition of sweat, Mechanism of sweat formation, secretion and its regulation. Insensible perspiration.
4. Regulation of body temperature in homeotherms - its physical and physiological processes, roles of neural and hormonal processes.
5. Heat Stress, Pyrexia, hyperthermia and hypothermia.

Paper-6B (Practical)
HP-202C
Total Mark = 50 (IA = 10 + ESE = 40) Credit = 02

Sl. No.	Practical	Marks
1.		

2.		
3		
4.		
5.		
6.		
5.	Laboratory Note book	
6.	*Viva voce*	
TOTAL		**40**

CONTENTS:

1. Study and identification of histological slides of digestive system and excretory system.
2. Study of Models for anatomical position and functions of organs of digestive system and excretory system and skin.
3. Urine analysis: Identification of abnormal constituents of urine (albumin, ketone, glucose, bile salt).
4. Assessment of nutritional status by recall method and Diet survey.
5. **Laboratory Records:** Student must get the laboratory note books duly signed by the respective teacher during practical classes.
6. ***Viva voce*:** Questions based on theory and practical syllabus of 2nd semester.

SEMESTER-IV

Paper-7 (Theory)
HP-203C
Total Mark = 100 (IA = 20 + ESE = 80) Credit = 04

Unit-I (Endocrinology-I)

1. Concept of autocrine, paracrine and endocrine system. Anatomical organization of endocrine glands. Mode of action of hormones, signal transduction and concept of second messenger system. Feedback regulation of hormone action.
2. Hypothalamus and Pituitary-Hypothalamus as a neuroendocrine organ. Hypothalamic releasing factors. Hypothalamo-hypophyseal portal system, Anterior and posterior pituitary- histological structure of the gland.
3. Pituitary hormones, functions and regulation of secretion of hormones.
4. Thyroid and Parathyroid-Histological structure of the glands. Thyroid and parathyroid hormones, chemical nature, mechanism of action, functions and regulation of secretion of the hormones. Calcium-phosphate homeostasis.

Unit-II (Endocrinology-II)

1. Adrenal gland-Histological structure of the gland. Adrenal cortical and medullary hormones, mechanism of action, functions and regulation of secretion of these hormones.