



Tripura University

(A Central University)

Suryamaninagar

West Tripura

Syllabus for
Four Years Undergraduate Programme Subject:
Human Physiology
(As per NEP-2020)

3rd Semester (Major)

Revised as on October, 2025

2ND YEAR

SEMESTER-III

HP-301C

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. Michaelis-Menten constant (K_m); Lineweaver-Burk plot.
3. Enzyme Inhibition: Type – competitive, noncompetitive 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-302C

Total Mark = 60 (IA = 24 + ESE = 36) Credit = 02

Unit-I (Excretory Physiology)

1. Histology, Structural and Anatomy of kidney and nephron.
2. Renal circulation– peculiarities and autoregulation.
3. GFR, measurements, regulation.
4. Juxtaglomerular apparatus – function and mechanism

Unit- II (Excretory Physiology)

1. Tubular reabsorption and secretion,
2. Diuretics – examples and mode of action
3. Formation of hypotonic & hypertonic urine-counter current mechanism.
4. Renal regulation of osmolarity and blood volume,

Unit III (Excretory physiology)

1. Renal regulation of acid-base balance, Renal regulation of erythropoiesis and calcium homeostasis.
2. Physiology of urinary bladder and micturition.
3. Abnormalities of micturition.
4. Renal function tests. diuretics.

Unit-IV (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-302C

Total Mark = 40 (IA = 16 + ESE = 24) Credit = 02

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.