

CC - 4: BASICS OF ANIMAL PHYSIOLOGY

(Credit: 3)

Course Code:

Objective: To provide detailed insight of structure, functions and physiology of different vital organs and systems of animal body.

Course outcomes:

Students will be able to understand and explain the mechanism that works to keep the human body functioning and will be able to explain the interaction and interdependence of various physiological processes.

UNIT – I

Blood - Structure and functions. Blood coagulation. Blood groups. Rh factor, ABO and MN. Structure of mammalian heart. Blood circulation. Origin, conduction and regulation of Heart beat. Cardiac cycle.

UNIT – II

Structure of trachea and lungs. Mechanism of respiration. Respiratory pigments. Dissociation curves. Carbon monoxide poisoning. Control of respiration.

UNIT – III

Structure and functions of gastrointestinal tract and its associated glands. Digestion of food - mechanical and chemical. Nutritional requirements and disorders.

UNIT – IV

Structure of nephron and kidney. Mechanism of urine formation. Regulation of water balance; Regulation of acid-base balance.

UNIT – V

Structure and function of Testis and Ovary. Reproductive Physiology. Physiology of Endocrine Glands and their role.

References:

1. Dennis, W. Wood. (1970). Principles of Animal Physiology. Arnold, Publ. Ltd., London.
2. Malcolin & Gorden. (1977). Animal Physiology: Principles and Adaptation. Macmillan Publ. Co. New York.

3. Nagabhushnam. (1993), Textbook of Animal Physiology. Oxford & IBH Publ. Co. Pvt. Ltd
4. Louw. (1993). Physiological Animal Ecology. Langman House, Burnt Mill, Harlow, England
5. Randall, Burggren and French. (2000). Eckert Animal Physiology Mechanisms and Adaptations. W.H. Freeman and Co. New York.
6. Guyton and Hall. (2013). Textbook of Medical Physiology.
7. K. Sembulingam and Prema Sembulingam. (2016). Essentials of Medical Physiology, 7th edition

PRACTICAL CC - 4: BASICS OF ANIMAL PHYSIOLOGY LAB (CREDIT: 1)

1. Determination of ABO Blood group
2. Enumeration of red blood cells and white blood cells using haemocytometer
3. Estimation of haemoglobin using Sahli's haemoglobinometer
4. Preparation of haemin and haemochromogen crystal.
5. Recording of frog's heart beat under in situ and perfused conditions
6. Recording of blood pressure using a sphygmomanometer
7. Microscopic slides of sections of mammalian oesophagus, stomach, duodenum, ileum, rectum liver, trachea, lung, kidney
8. Ionic regulation of erythrocytes in two different media
9. Qualitative test for sugars, proteins, lipids
10. Activity of salivary amylase