

## **ZOOLOGY SYLLABUS FOR IV SEMESTER**

### **ZOOLOGY - PAPER - IV**

#### **EMBRYOLOGY, PHYSIOLOGY AND ECOLOGY**

**Periods:60**

**Max. Marks: 100**

---

#### **Unit - I**

##### **1.1 Developmental Biology and Embryology**

- 1.1.1 Gametogenesis
- 1.1.2 Fertilization
- 1.1.3 Types of eggs
- 1.1.4 Types of cleavages
- 1.2 Development of Frog upto formation of primary germ layers
- 1.3 Formation and functions of Foetal membrane in chick embryo
- 1.4 Development, types and functions of Placenta in mammals

#### **Unit - II**

##### **2.1 Physiology - I**

- 2.1.1 Elementary study of process of digestion
- 2.1.2 Absorption of digested food
- 2.1.3 Respiration - Pulmonary ventilation, transport of oxygen and carbondioxide
- 2.1.4 Circulation - Structure and functioning of heart, Cardiac cycle
- 2.1.5 Excretion - Structure of nephron, urine formation, counter current mechanism

#### **Unit - III**

##### **3.1 Physiology - II**

- 3.1.1 Nerve impulse transmission - Resting membrane potential, origin and propagation of action potentials along myelinated and non-myelinated nerve fibers
- 3.1.2 Muscle contraction - Ultra structure of muscle fibre, molecular and chemical basis of muscle contraction
- 3.1.3 Endocrine glands - Structure, secretions and the functions (of hormones) of pituitary, thyroid, parathyroid, adrenal glands and pancreas
- 3.1.4 Hormonal control of reproduction in a mammal

#### **Unit - IV**

##### **4.1 Ecology - I**

- 4.1.1 Meaning and scope of Ecology
- 4.1.2 Important abiotic factors of Ecosystem - Temperature, light, water, oxygen and CO<sub>2</sub>
- 4.1.3 Nutrient cycles - Nitrogen, carbon and phosphorus



## **ZOOLOGY PRACTICAL SYLLABUS FOR IV SEMESTER**

### **ZOOLOGY - PAPER - IV**

#### **EMBRYOLOGY, PHYSIOLOGY AND ECOLOGY**

**Periods: 24**

**Max. Marks: 50**

---

#### **I. Embryology**

1. Study of T.S. of testis, ovary of a mammal
2. Study of different stages of cleavages (2, 4, 8 cell stages)
3. Study of chick embryos of 18 hours, 24 hours, 33 hours and 48 hours of incubation

#### **II. Physiology**

1. Qualitative tests for identification of carbohydrates, proteins and fats
2. Qualitative tests for identification of ammonia, urea and uric acid
3. Study of activity of salivary amylase under optimum conditions
4. Study of prepared slides of T.S. of duodenum, liver, lung, kidney, spinal cord, bone and cartilage

#### **III. Ecology**

1. Determination of pH of given sample
2. Estimation of dissolved oxygen of given sample
3. Estimation of total alkalinity of given sample
4. Estimation of salinity of given sample