

## BACHELORS WITH ZOOLOGY AS MAJOR (CT – III)

### 5<sup>th</sup> SEMESTER

#### ZOL522J3 ZOOLOGY \_ FUNDAMENTALS OF ENTOMOLOGY

**CREDITS: THEORY: 04; PRACTICAL: 02**

#### **COURSE OBJECTIVE:**

*To impart knowledge about morphology, classification, structure & function of insects*

#### **Learning outcome:**

*The learner will get insights about the fundamentals of insect science and will utilize the knowledge for identification of insects & understanding the functioning of different organ systems.*

#### **Theory (4 Credits)**

#### **UNIT 1: MORPHOLOGY AND CLASSIFICATION OF INSECTS**

- 1.1 Structure and composition of integument
- 1.2 Structure of head, thorax and abdomen
- 1.3 General features and outline classification of Apterygota up to order and sub-order level
- 1.4 General features and outline classification of Pterygota up to order level

#### **UNIT II: INSECT ANATOMY-I**

- 2.1 Digestive system
- 2.2 Excretory system
- 2.3 Respiratory system
- 2.4 Circulatory system

#### **UNIT III: INSECT ANATOMY-II**

- 3.1 Nervous system
- 3.2 Sense organs: simple & compound eyes
- 3.3 Endocrine system
- 3.4 Reproductive system

#### **UNIT III: INSECT PHYSIOLOGY**

- 4.1 Physiology of digestion and assimilation
- 4.2 Physiology of respiration
- 4.3 Physiology and biochemistry of haemolymph, haemocytes and their functions
- 4.4 Physiology of excretion and formation of uric acid

#### **PRACTICALS (2 CREDITS)**

1. Specimen study of some insect orders
2. Permanent mount preparation of thrips, aphids, sucking lice, mosquitoes
3. Minor dissection/temporary mount preparation of head, antennae, wings, and legs of grasshopper/cockroach/housefly
4. Collection, preservation and identification of different types of insects and their larvae
5. Dissection of digestive system in insects (Grasshopper/Cockroach)
6. Dissection of male and female reproductive systems in insects (Grasshopper/Cockroach)

#### **SUGGESTED BOOKS / READING MATERIAL**

1. Entomology by Cedric Gillott Plenum Press, New York
2. Fundamentals of Entomology by Richard J. Elizinga
3. Imm's General Text Book of Entomology vol. I & II by Richards and R. G. Davis
4. Introduction to Entomology by Comstock
5. Modern Entomology by D. B. Tembhare, Himalaya Publishing House
6. Introduction to Entomology by Comstock
7. Structure and Function of Insects by R. F. Chapman