

ENTOMOLOGY**Course III: Laboratory Exercise (MSZO612) Practical Zoology****UNIT WISE CONTENTS**

Candidates must produce at the time of practical examination their preparations, collection and practical record books containing a complete record of the laboratory work done during the session. The practical work shall comprise of following units:

Block I: Laboratory Course, Entomology**Unit 01: Insect Anatomy and Physiology Exercise**

- 1.1 Objectives
- 1.2 Introduction
- 1.3 Study of models of Nervous System of Insects
- 1.4 Counting of Haemocytes in Insects
- 1.5 Estimation of Proteins, Sugars & Lipids in Insect Haemolymph by Colorimetric Methods.
- 1.6 Permanent preparation of sting apparatus of honey bee/wasp, tympanum of locust, salivary glands of Cockroach, mouth parts, legs and wings of different insects.
- 1.7 Microtomy of Insect Tissues
- 1.8 Determination of pH of the gut contents of any Insect
- 1.9 Summary
- 10.1 Terminal Questions and Answers

Unit 02: Taxonomy and Biosystematics of Insects

- 2.1 Objectives
- 2.2 Introduction
- 2.3 Use of dichotomous key in the Identification of Insects
- 2.4 Identification of insects up to Family of the Orders
 - 2.4.1 Thysanura (Machilidae, Lepismatidae)
 - 2.4.2 Collembola
 - 2.4.3 Isoptera
 - 2.4.4 Phthiroptera (Phthiraptera) (Anoplura and Mallophaga)
 - 2.4.5 Orthoptera (Acrididae, Tettigoniidae and Gryllidae)
 - 2.4.6 Heteroptera (Pentatomidae, Pyrrhocoridae, Coreidae, Reduviidae, Nepidae, and Belostomatidae)
 - 2.4.7 Homoptera (Fulgoridae, Membracidae, Cicadidae, Aphidae, Coccidae)
 - 2.4.8 Coleoptera (Hydrophilidae, Meloidae, Coccinellidae, Curculionidae, Scarabaeidae, Chrysomelidae, Cerambycidae)
 - 2.4.9 Lepidoptera (Noctuidae, Sphingidae, Bombycidae, Nymphalidae, Pieridae, Papilionidae, Pyralidae and Saturniidae)
 - 2.4.10 Hymenoptera (Ichneumonidae, Chalcididae, Braconidae, Vespidae, Apidae, Formicidae)
 - 2.4.11 Diptera (Tipulidae, Chironomidae, Culicidae, Muscidae, Tabanidae, Tachinidae, Drosophilidae, and Bombyliidae)
- 2.5 Study of the different types of adaptation found in insects
- 2.6 Summary
- 2.7 Terminal Questions and Answers

Unit 03: Applied entomology exercise

- 3.1 Objectives
- 3.2 Introduction
- 3.3 Pests of fruits, Vegetables & Stored grains
- 3.4 Study of the structure of Beehive
- 3.5 Bioassay studies on Insects using some Contact Poisons
- 3.6 Study of the Life Cycles of some important Insect Pests
- 3.7 Study of Pollinators Insect Species and their Host Plant
- 3.8 Identification and study of Taxonomic Status of Insect and their Host Plant used in various economic practices: Apiculture, Sericulture and Lac culture
- 3.9 Summary
- 3.10 Terminal Questions and Answers

Unit 04: Insect Ecology Exercise

- 4.1 Objectives
- 4.2 Introduction
- 4.3 Exercises on Insect Behaviors
- 4.4 Insect Plant Interactions and Bee Plant of Local Area
- 4.5 Study of habitat quality effect on Insect Assemblage

SOS/MSZO613/ Dissertation (Entomology)

M.Sc. Zoology 4th Sem.
9 Credits

Course IV: Project Work (Entomology) (MSZO613)

1. Ancestry and Evolution.
2. Collection mounting and Presentation of Insect.
3. Classification of Insect up-to Order.
4. Insect pest of cereals (Wheat, Maize, Rice etc.)
5. Pest of Stored Grains.
6. Pest of Vegetables.
7. Pest of Fruits.
8. Apiculture, Sericulture, Lac Culture etc.
9. Economic Importance of Insect.
10. Integrated Pest Management.