

Z0551 IMMUNOLOGY (LABORATORY BOOK)

CONTENTS

- Unit –1 : Blood film preparation and identification of cells
- Unit –2 : Total count and differential count of leucocytes
- Unit –3 : Determination of total red blood cells and white blood cells in the blood sample
- Unit –4 : Estimation of serum proteins
- Unit –5 : Estimation of Albumin and globulin
- Unit –6 : Histology of lymphoid organs
- Unit –7 : Blood groups
- Unit –8 : Widal test
- Unit –9 : Pregnancy test
- Unit –10 : Immunodiffusion
- Unit –11 : Immunoelectrophoresis
- Unit –12 : ELISA – demonstration

Z0552 ANIMAL BIOTECHNOLOGY (LABORATORY BOOK)

BLOCK – I Fundamental Techniques of Biotechnology

- Unit –1 : General histology and Cell Tissue Culture
- Unit –2 : Cell Culture
- Unit –3 : The Stem Cell
- Unit –4 : Propagation and maintenance of tissue culture
- Unit –5 : Cell Culture from Cell Line
- Unit –6 : Cellular aspects Cell Line

BLOCK – II Applied Biotechnology

- Unit –7 : Microbiology – testing and evaluation of coliform bacteria
- Unit –8 : Phytoplanktons and Zooplanktons
- Unit –9 : Production of Pathogen-Free Plants through Meristem Culture
- Unit –10 : Vermitechnology
- Unit –11 : Penicillin Production and Testing of Antimicrobial Activity
- Unit –12 : Enzyme Immobilization

ZO553 TOXICOLOGY (LABORATORY BOOK)

CONTENTS

BLOCK – I

EVALUATION OF INSECTICIDE TOXICITY

- Unit –1 : Computation of Toxicity – Probit Analysis
- Unit –2 : Estimation of contact toxicity of insecticide film
- Unit –3 : Evaluation of efficacy of mosquito repellent coils
- Unit –4 : Evaluation of efficacy of mosquito repellent creams
- Unit –5 : Testing efficacy of household insecticides
- Unit –6 : Detection of insecticide resistance in *Helicoverpa armigera*

BLOCK – II

BIOCHEMICAL TECHNIQUES

- Unit –7 : Nerve Cells in Insects
- Unit –8 : Mixed Function Oxidases (MFO) Assay
- Unit –9 : Assay of Carboxylesterase
- Unit –10 : Estimation of acetylcholinesterase in Insects
- Unit –11 : Emulsion Stability Test

BLOCK – III

PESTICIDE RESIDUE ANALYSIS

- Unit –12 : Determination of pesticide residues in water
- Unit –13 : Determination of pesticide residues in soil
- Unit –14 : Determination of pesticide residues in fat

ZO554 (A) LABORATORY BOOK

Block – I

Insect External Morphology

- Unit –1 : External Characters of Typical Insect (Viz., Grasshopper)
- Unit –2 : Demonstration of Chitin in the Integument
- Unit –3 : Identification of Some Common Orders of Class Insectia

Block – II

Economic Entomology

- Unit –4 : Identification of Important Pests and their Symptoms of Damage
- Unit –5 : Identification of Importance Pests stored grains – and their symptoms of damage
- Unit –6 : Important Pests of Horticultural Crops – and their symptoms of damage
- Unit –7 : Attraction by insect Sex Pheromones

Block – III

Forensic Entomology, Urban Entomology and Medical Entomology

- Unit –8 : Forensic Entomology Practical

Unit –9 : Excavation of an Identification of Mosquito Vectors

Block – IV

Dissections

Unit –10 : Dissections of Mouth Parts of Insects

Unit –11 : Dissections of Silk Gland, Appendages, Digestive System

Block – V

Field Visit & Report

Unit –12 : Visit to Biological Control Laboratory

ZO 554(B) APPLIED FRESHWATER AQUACULTURE

(LABORATORY BOOK)

CONTENTS

BLOCK – I FISHERY SCIENCE

Unit – 1 Study of Commercially Important Fresh Water Finfish
(Crap, Cat Fishes) And Shell Fish (Prawn)

Unit – 2 Fish Morphometry

BLOCK – II DISSECTION – FISH REPRODUCTION & NATURAL FOOD CULTURE

Unit – 3 Collections and Preservation of Pituitary Gland

Unit – 4 Identification of Ovary Maturation Stages in Crap And Estimation of Gonad Volume, Fecundity, Gonadomatic Index (GSI)

Unit – 5 Cultivation of Spirulina in Laboratory Conditions

Unit – 6 Artemia (brine Shrimps) – Decapsulation

BLOCK – III DISSECTIONS – FISH REPRODUCTION & NATURAL FOOD CULTURE

Unit – 7 Estimation of pH of Water

Unit – 8 Estimation of Total Hardness Of Water

Unit – 9 Determination of Dissolved Oxygen in Water

Unit – 10 Quantitative Estimation of Plankton

Unit – 11 Quantitative Estimation of Planktonic Organism in Fresh Water Pond and Food Chains

BLOCK – IV FISH PATHOLOGY

Unit – 12 Identification of Fish Diseases Caused by Micro Organisms and Parasites

Unit – 13 Determinations of Health Conditions of a Fish

Unit – 14 Extraction of DNA from Fish Fins and Scales

Unit – 15 Separations of Proteins by Polyacrylamide Gel Electrophoresis

ii) Duration of the programme: Minimum duration of programme is two (02) years and maximum duration is six (06) years

iii) Faculty and support staff requirement: One Academic Associate is available in Department of Zoology, School of Science. However, One Permanent Faculty will be required

for more efficient conduction of the programme.