

ZO 554(A) APPLIED ENTOMOLOGY

Programme: Master of Science Zoology MSCZO12

Year / Semester: 2nd Year

Credits: 6

Paper Name: Applied Entomology

BLOCK – I CLASSIFICATION AND STRUCTURE

Unit –1 : Insect taxonomy

Unit –2 : External Morphology-Study of generalized insect

Unit –3 : Internal Morphology

Unit –4 : Insect Behaviour

BLOCK – II: ECONOMIC ENTOMOLOGY

Unit –5 : Pests of field Crops of stored grains

Unit –6 : Horticultural Crop Pests

Unit –7 : Integrated Pest Management

Unit –8 : Non Insect Pests (Biology), Damage & Management

BLOCK – III: PRODUCTIVE AND BENEFICIAL INSECTS

Unit –9 : Silkworm (Biology, nature of produce, uses)

Unit –10 : Honeybees (Biology, nature of produce, uses)

Unit –11 : Lac insects and other beneficial insects

BLOCK – IV: LIVESTOCK, URBAN AND MEDICAL ENTOMOLOGY

Unit –12 : Livestock Entomology

Unit –13 : Urban Entomology

Unit –14 : Medical Entomology

Unit –15 : Forensic Entomology

Unit –16 : Aquatic Entomology

ZO 554(B) APPLIED FRESHWATER AQUACULTURE

Programme: Master of Science Zoology MSCZO12

Year / Semester: 2nd Year

Credits: 6

Paper Name: Applied Freshwater Aquaculture

BLOCK – I: Fish Breeding and Seed Production

Unit –1 : Fish Breeding and Fish

Genetics

Unit –2 : Endocrinology of Reproduction & Breeding of Common Carp

Unit –3 : Fish seed production Technology

BLOCK – II: Freshwater Aquaculture Production Technology

Unit –4 : Extensive, semi intensive and intensive Cultures of Carp

Unit –5 : Freshwater prawn culture (*Macrobrachium rosenbergii*)

Unit –6 : Culture of pearl

Unit –7 : Culture of Natural Foods –

Daphnia, Artemia, Zoo plankton and Phytoplankton

Unit –8 : Aquaculture farm design, construction

BLOCK – III: Production system management

Unit–9: Freshwater fish farm and management

Unit –10: Water and soil quality management

Unit –11: Fish Feed and feeding strategies

BLOCK – IV: Fin Fish Pathology

Unit –12A : Infectious Diseases – Viruses, Bacteria and Fungi (Clinical picture, pathology, symptoms and prophylaxis)-Viral diseases of fish – 1. Papillomatosis, 2. Lymphocystis 3. Infectious pancreatic necrosis – Bacterial diseases of fish: 1.

Bacterial haemorrhagic septicemia, 2. Bacterial gill diseases 3. Columnaris diseases:-Fungal diseases of fish: 1. Branchiomycosis, 2. Saprolegniasis.

Unit – 12B: Infectious parasitic diseases – Protozoa & Metazoan parasites

(Life cycle, Clinical picture, pathology, symptoms and prophylaxis)

-Protozoan diseases of fish; 1. Costiasis 2. Whirling disease

3. Ichthyophthirius

-Metazoan parasites of fish & diseases caused; (Life cycle, Clinical

Picture, pathology, symptoms and prophylaxis) Monogenetic

Trematode parasites (*Dactylogyru*s, *Gyrodactylus*, *Diplozoan*), Digenetic

Trematodes (*Diplostomum*, *Sanguinicola*), Cestode parasites

(*Ligula* and *Dibothriocephalus latus*),

-Nematodes and fish leeches.

-Crustacean parasites of fish & diseases: 1. Argulus, 2. Ergasilus 3. Lerneae.

BLOCK – V: Disease Management-Polymerase Chain Reaction (PCR)

Technology

Unit –13 Fundamentals – DNA Structure, Primers, Probes, Nucleases

Unit –14 Introduction to Polymerase Chain Reaction (PCR)

Unit –15 Instrumentation and Reagents

Unit –16 Electrophoresis