CODE: ZOO-HE-6016

BIOLOGY OF INSECTA

THEORY **(Credits 4)**

UnitI: Introduction **4**

General Features of Insects

Distribution and Success of Insects on the Earth

Unit II:Insect Taxonomy **4**

Basis of insect classification; Classification of insects up to orders

Unit III: General Morphology of Insects **8**

External Features; Head – Eyes, Types of antennae, Mouth parts w.r.t. feeding habits

Thorax:Wings and wing articulation, Types of Legs adapted to diverse habitat Abdominal appendages and genitalia

Unit IV: Physiology of Insects **28**

Structure and physiology of Insect body systems - Integumentary, digestive, excretory, circulatory, respiratory, endocrine, reproductive, and nervous system

Sensory receptors

Growth and metamorphosis

Unit IV: Insect Society **6**

Group of social insects and their social life

Social organization and social behaviour (w.r.t. any one example)

Unit V: Insect Plant Interaction **4**

Theory of co-evolution, role of allele chemicals in host plant mediation Host-plantselectionbyphytophagousinsects,Insectsasplantpests

Unit VI: InsectsasVectors **6**

Insects as mechanical and Biological vectors, Brief discussion on houseflies and mosquitoes as important insect vectors

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Department of Zoology
Rangapara College
Sonitpur, Assam

CODE: ZOO-HE-6026

FISH AND FISHERIES

THEORY **(Credits 4)**

UNIT 1: Introduction and Classification: **6**

General description of fish; Account of systematic classification of fishes (upto classes); Classification based on feeding habit, habitat and manner of reproduction.

UNIT 2: Morphology and Physiology: **18**

Types of fins and their modifications; Locomotion in fishes; Hydrodynamics; Types of Scales, Use of scales in Classification and determination of age of fish; Gills and gas exchange; Swim Bladder: Types and role in Respiration, buoyancy; Osmoregulation in Elasmobranchs; Reproductive strategies (special reference to Indian fishes); Electric organs; Bioluminiscience; Mechanoreceptors; Schooling; Parental care; Migration

UNIT3:Fisheries **12**

Inland Fisheries; Marine Fisheries; Environmental factors influencing the seasonal variations in fish catches in the Arabian Sea and the Bay of Bengal; Fishing crafts and Gears; Depletion of fisheries resources; Application of remote sensing and GIS in fisheries; Fisheries law and regulations

Unit4:Aquaculture **20**

Sustainable Aquaculture; Extensive, semi-intensive and intensive culture offish; Pen and cage culture; Polyculture; Composite fish culture; Brood stock management; Induced breeding of fish; Management of finfish hatcheries; Preparationandmaintenanceoffishaquarium;Preparationofcompounddietsf or fish; Role of water quality in aquaculture; Fish diseases: Bacterial, viral and parasitic;Preservationandprocessingofharvestedfish,Fisheryby-products

UNIT 5: Fish in research **4**

Transgenic fish, Zebra fish as a model organism in research

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Department of Zoology
Bongaigaon College