Course VII: Developmental Biology and Applied Zoology (BSCZO203)

UNIT WISE CONTENT (BSCZO202)

Block I Developmental Biology:

Unit 1: Gametogenesis

Types of eggs, Spermatogenesis and Oogenesis. Chemical and metabolic events during gamete formation.

Unit 2: Fertilization

Approximation of gametes, Capacitation, Acrosome reaction, formation of fertilization membrane, egg activation, prevention of polyspermy.

Unit 3: Cleavage and embryonic induction

Patterns of cleavage , control of cleavage patterns, chemical changes during cleavage and significance of cleavage. Embryonic induction and concept of organizer.

Unit 4: Blastulation and Gastrulation in Frog and Chick

Fate maps, Foetal membranes: Their formation and significance.

Block II. Applied Zoology

Unit 5: Aquaculture

General principles of aquaculture: Induced Breeding, Composite fish culture, Lay out of fish farm and its management and by-products of fishing industry. Prawn culture and Pearl culture.

Unit 6: Sericulture

Different kinds of silk producing insects. Host plants of silk insects. Rearing and diseases of silkworm. Reeling and fiber technology.

Unit 7: Apiculture

Honey bees of India. Management of bee colonies, bee enemies and their control. Extraction and processing of honey. Role of Honey bees in pollination.

Unit 8: Lac Culture

Different kinds of Lac producing insects. Host plants, life cycle and diseases of lac insects.

Unit 9: Poultry

Types of poultry breeds, poultry housing, farm and farm management. Grading, handling and marketing of eggs. Poultry diseases and their control.

Unit 10: Economic importance of Mammals

Economic Importance of mammals in agriculture, horticulture, dairy, leather, wool and fur industry.

Unit 11: Store grain pests

Store grains pests: Pulse beetle (*Callosobruchus maculatus*), Rice weevil (*Sitophilus oryzae*), Wheat weevil (*Trogoderma granarium*), Rust red flour beetle (*Tribolium castaneum*) and Lesser grain borer (*Rhizopertha dominica*). Their systematic positions, habits, life cycle, nature of damage and control measures.

Unit 12: Pest Management

Biological and Chemical control: Elementary knowledge of pesticides and integrated pest management.

Unit 13: Parasitology: General characters and Classification up to order level, morphology (including adaptations), life cycle, pathogenecity, disease caused and control measures of *Entamoeba, Trypanosoma, Leishmania, Giardia*, Ascaris, *Ancylostoma, Enterobius , Wuchereria* and *Schistosoma*.