

Unitization of Zoology Syllabus 2023
BSC I Sem, Paper 1

Unit I. (August 2023)

Detailed study of Amoeba Paramecium and Plasmodium.

Classification upto orders with ecological notes and economic importance of the various protozoan.

Unit II (September 2023)

Detailed study of Porifera (Sycon) and Cnidarians (Obelia).

Classification upto orders with ecological notes and economic importance of the animals belongs to Porifera and Cnidarians .

Unit-III (October 2023)

Methods in Cell Biology Organization of Cell Plasma membrane

Unit IV (November 2023)

Endoplasmic Reticulum : Structure types associated enzymes functions.

Mitochondria : Structure mitochondrial enzymes and the role of mitochondria in respiration Mitochondrial DNA.

Golgi complex : Structure, associated enzymes and functions.

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Low Depth

Unitization of Zoology Syllabus 2023
BSC I Sem, Paper II
Paper-II: Biodiversity & Cell Biology-II (Zoo.102)

Unit I (August 2023)

Detailed study of the following animal types:-

- Platy helminthes : Fasciola, Taenia
Aschelminthes : Ascaris
Parasitic adaptations in Helminths

Classification upto orders with brief ecological note and economic importance (if any) of the following

- Platy helminthes : Dugesia, Schistosoma and Echinococcus.
Aschelminthes : Ascaris, Oxyuris, Wuchereria.

Unit II (September 2023)

Detailed study of the following animal type:

- Annelida : Pheretima

Classification upto orders with brief ecological note and economic importance (if any) of the following

- Annelida : Nereis, Polynoe, Eunice, Arenicola, Aphrodite,
Amphitrite, Chaetopterus

Unit III (October 2023)

- Lysosomes : Lysosomal enzymes, Ploymorpgism and functions
Ribosomes : Types of ribosomes, their structure and functions.
Centrosome : Structure and functions

Unit IV (November 2023)

- Nucleus : Structure and functions of nuclear membrane, nucleous
and chromosomes Euchromatin & Heterochromatin

An elementary idea : Introduction, difference between normal and Cancer cells, type of cell

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transformation cancer basic idea of transformation (Properties of Cancer cells, in Cancer Origin of Cancer)

An elementary idea of

Cellular & Humoral immunity, Elementary idea of cell & organs of Cellular basis of organ of immune system Immunity

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Unitization of Zoology Syllabus 2023
BSC III Sem, Paper I
Unit I (August 2023)

Chordates-Origin, Parental care and migration.
Protochordates-Urochordata-Type Study-Herdmania (except development)
Cephalochordata-Type Study-Amphioxus (except development)

Classification of the animals up to orders relating to the following groups along with brief ecological notes of the following:

Protochordates : Herdmani, Molgula, Pyrosoma, Doliolum Salpa, Oikopleura & Branchiostoma (excluding development)

Unit II (September 2023)

Classification-External Characters of Petromyzon & affinities of Cyclostomata Pisces- Scales & fins, Osmoregulation, Type study-Labeo.

Cyclostomata: Myxine Petromyzon & Ammocoetes larva.

Chondrichthyes : Zygaena (hammer headed shark), Pristis (saw fish), Narcine (electric ray), Trygon, Rhinobatus and Chimaera (rabbit fish).

Actinopterygii : Polypterus, Acipenser, Lepisosteus, Muraena, Mystus Catla, Hippocampus, Syngnathus, Exocoetus, Anabas, Diodon, Tetradon, Echeineis and Solea.

Dipneusti (Dipnoi) : Protopterus (lung fish)

Unit III (October 2023)

Amphibia- Type study-Hoplobatrachus Tigerinus.

Classification of the animals up to orders relating to the following groups along with brief ecological notes of the following:

Amphibia : Uraeotyphlus, Necturus, Amphiuma, Amblystoma and its Axolotl Larva, Triton, Salamandra, Hyla, Rhacophorus.

Unit IV (November 2023)

Concept and evidences of organic evolution
Theories of organic evolution. Origin of life.

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BSC III Sem, Zoology Paper II

Unit I (August 2023)

Biochemistry and its scope:
Carbohydrates, proteins, lipids and nucleic acids: their classification, structure and functions.

Unit II (September 2023)

Enzymes : Nature, nomenclature, mode of action, their classification, coenzymes and cofactors.
Carbohydrate metabolism : The Embden Meyerhoff, Parnas pathway (glycolysis) the tricarboxylic acid cycle, the hexose monophosphate shunt, glycogenesis and glycogenolysis

Unit III (October 2023)

Digestion : Digestion of dietary constituents, regulation of digestive processes and absorption extra and intra cellular digestion, enzymatic digestion and symbiotic digestion.

Respiration : Exchange and transport of respiratory gases, Oxygen dissociation curve of hemoglobin, Bohr effect, chloride shift, Haldane effect and control breathing.

Unit IV (November 2023)

Blood : Composition and function of blood and lymph, Function of hemoglobin, blood clotting. Blood groups including Rh. Factor.

Heart : Origin and regulation of heart beat, cardiac cycle, electrocardiogram, cardiac output, blood pressure and micro-circulation.

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Unitization of Zoology Syllabus 2023
BSC V Sem, Paper I Development Biology (Zoo-501)

Unit I (August 2023)

Gametogenesis with particular reference to differentiation of spermatozoa. Vitellogenesis, role of Egg. Maturation: egg membranes: polarity of egg.

Unit II (September 2023)

Fertilization, parthenogenesis.

Cleavage: Type of cleavage patterns depending upon amount and distribution of yolk and position of spindle. Blastula and type of blastula.

Fate maps of chick and frog embryos.

Unit III (October 2023)

Induction: cell to cell interactions: juxtacrine, paracrine, gap junctions: basic concepts of organizers and inducers and their role, Determination and differentiation.

Development up to three germ layers in Herdmania, amphioxus, frog, chick and rabbit.

Unit IV (November 2023)

Foetal membranes, their formation and role.

Mammalian placenta- its formation, types and functions

Metamorphosis in Herdmania and Rana (frog)

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BSc V Sem Zoology Paper II

OPTION-II ECONOMIC ENTOMOLOGY AND PEST MANAGEMENT-I (ZOO-502B)

Unit I (August 2023)

Introduction to Entomology with various orders.

Comparative studies of mouth parts in Grasshopper, Honeybee, Butterfly, Red-Cotton bug, House fly and Mosquito.

Major modifications in the antennae and legs of insects.

Development of Insects: Different type of metamorphosis along with a study of different kinds of larvae and pupae. Systematic position, habits and nature of damage of the following pests of crops and vegetables:

I. Sugarcane:

1. Sugarcane leaf hopper (*Pyralia perpusilla*) along with life cycle and control measures.
2. Sugarcane top borer (*Scirpophaga nivella*)
3. Sugarcane stem borer (*Chilo tritaenifuscatellus*)

II. Cotton:

1. Pink bollworm (*Pectinophora gossypiella*) along with life cycle and control measures.
2. Red cotton bug (*Dysdercus ingulatus*)
3. Cotton grey weevil (*Mylokerus maculosus*)
4. Surface grasshopper (*Chrotogonus trachypterus*)
5. Cotton jassid (*Empoasca devastans*)

Unit II (September 2023)

Systematic position, habits and nature of damage of the following pests of crops and vegetables:

III. Paddy:

1. Rice Gurdhy Bug (*Leptocorisavaricornis*) along with life cycle and control measures.
2. Rice grasshopper (*Hieroglyphus banian*)
3. Rice Hispa (*Diuraphis ramosa*)

IV. Wheat:

1. Wheat stem borer (*Sesamia inferens*) along with life cycle and control measures.
2. Termites (*Microtermes obesi*)
3. Aphids (*Macrosiphum miscanthi*) Jassids (*Amrasca* sp.)


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**BA/B.SC. (GENERAL) THIRD YEAR (SEMESTER SYSTEM)2022-2023
SYLLABUS**

V. Vegetables:

1. Red pumpkin beetle (*Aulacophora foveicollis*)
2. Pumpkin fruit fly (*Dacus cucurbitae*) along with life cycle and control measures.
3. Hadda beetle (*Epilachna vigintioctopunctata*)

Unit III (October 2023)

VI. Pests of Stored Grains: Systematic position, habits and nature of damage of the following pests of stored grains:

1. Pulse Beetle (*Callosobruchus maculatus*) along with life cycle and control.
2. Rice weevil (*Sitophilus oryzae*)
3. Khapra beetle (*Trogoderma granarium*)
4. Rust red flour beetle (*Tribolium castaneum*)
5. Lesser grain borer (*Rhizopertha dominica*)
6. Rice moth (*Corcyra cephalonica*)

Unit IV (November 2023)

Systematic position, disease caused and control of the following insects of Medical and Veterinary importance:

1. Mosquitoes (*Aedes*, *Anopheles*, *Culex*)
2. Sand fly (*Phlebotomus minutus*)
3. House fly (*Musca domestica*) along with life cycle of house fly.
4. Horse fly (*Tabanus striatus*)
5. Blow fly (*Calliphora erythrocephala*)
6. Warble fly (*Hypoderma lineatum*)
7. Poultry louse (*Menopon gallinae*)
8. Sucking louse (*Haematopinus eurysternus*)
9. Fleas (*Xenopsylla cheopis*)

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