

B.Sc ZOOLOGY

SEMESTER I

PAPER I - Nonchordata PART I

UNIT I : PROTOZOA

- 1.1 General characters of the phylum and classification up to classes with suitable examples
- 1.2 Autotrophic, holozoic, holophytic and saprophytic nutrition, definition with one example.
- 1.3 Locomotion : Amoeboid Ex. Amoeba (Emphasis on walking movements & sol-gel theory) Flagellar movement and euglenoid movement Ex. Euglena, ciliary movement Ex. Paramecium (paddle stroke theory).
- 1.4 Reproduction : A sexual Binary fission, multiple fission and sporulation with suitable examples.
- 1.5 A brief account of autogamy, endomixis, conjugation in paramecium caudatum.
- 1.6 Economic importance of protozoans with special reference to
Water and Soils forms
Radiolarian and foraminiferan ooze.

UNIT II : PORIFERA

- 2.1 General characters of the phylum and classification up to classes with suitable examples.
Histology with reference to sycon.
Canal system and its evolution Asconoid, syconoid, Leuconoid and Rhagonoid type.
Skeleton : Emphasis on major types of spicules and sponging fibres.
Reproduction : A sexual (External & Internal) sexual reproduction in sponges,
Development of Amphiblastula and its metamorphosis.
Regeneration in sponges and sponge culture.

UNIT III : METAZOA

- Unique feature of Mesozoa.
- Origin of Mesozoa: Flagellate Blastea and Gastrea theories and Hadzis theory.

UNIT IV : COELENTERATA

- General characters of the phylum and classification up to classes with suitable examples.
- Polymorphism in siphonophora with reference to the Helistemma
- Structure and life history of Aurelia.
- Corals: General organization of coral & polyp, types of corals-soft and stony corals, solitary and colonial forms with suitable examples.

Theories on Coral-reef formation

Economic importance of Corals.

General account of Ctenophora and their affinities.

UNIT V : PLATHYHELMINTHES

General characters of the phylum and classification up to with suitable examples.

Regenerations in Planaria-Polarity and child's axial gradient Theory.

UNIT VI : NEMATODA

General characters of the phylum.

A brief account of soil Nematodes.

UNIT VII : ANNELIDA

General characters of the phylum, Classification-details of each classes with examples.

Type study: Nereis Externals, emphasis on head on Nereis and Parapodium.

Heteronereis.

Trochophore larva and its significance.

Externals of Leech, Digestive and Reproduction system.

Vermiculture-Role of Earthworm in Soil fertility.

Significance of Coelom and Metamerism.

UNIT VIII : PARASITOLOGY

Parasitism, Occurrence, Disease caused, mode of transmission and preventive measures of the following :

PROTOZOA :

Entamoeba histolytica

Typanosoma gambiensi

Plasmodium vivax-Life history.

PLATHYHELMINTHES :

Fasciola hepatica

Schistosoma haematobium

Taenia solium

Morphological and physiological parasitic adaptations in Flatworms.

NEMATODA

Enterobius vermicularis

Wuchereria bancrofti

Ascaris lumbricoides-Morphology and life history.

Leech: Parasitic Adaptations (Both Morphological and Physiological)

UNIT IX - ECOLOGICAL ADAPATATION AND DIVERSITY

PROTOZOA

Arcella, Noctiluca, Trichonympha.

PORIFERA

Cliona, Spongilla.

COELENTERATA

Obelia, Pennatula, Zoanthus.

HELMINTHES

Planaria

ANNELIDA

Earthworm-Local Varieties.

PRACTICAL I

NON CHORDATA

PROTOZOA :

Observation of water samples for live specimens.

Permenant slides of forminiferan and radiolarian ooze, Euglena, Noctiluca and Paramecium(Conjunction)

Observation of rectal parasites of Frog.

PORIFERA :

Specimens and slildes of Sycon, Euplectella, Hyalonema, Euspongia, Gemmule and Spicules.

COELENTERATA

Specimens and slides of obelia (habit and medusa) physalia, Velella, porpita, Aurelia and Ephyra larva.

Sea anemone, T.S. of sea anemone through stomodaeum, Astrapta, Meandrina, Corallium, Gorgonia and Fungia.

HELMINTHES

Specimens and slides of Planaria, liver fluke and tapeworm(scolex)

Round worm (male and female)

T.S. of liver fluke and tapeworm.

T.S. of round worm (male and female)

ANNELIDA

Specimen and slides of Nereis, Heteronereis, Aphrodite, Sabella, Arenicola and Chaetopterus, Trochophore larva, T.S. of earthworm through intestine (typhlosolar region).

Dissection of Earthworm

Nervous system

Mounting of setae and ovary

Dissection of Leech

Digestive system

Mounting jaw and testicular nephridia.

II SEMESTER

NONCHORDATA PART II

ARTHROPODA

1.1 General characters of the phylum and classification upto classes with suitable examples.

Peripatus : Unique features and systematic position.

Prawn : *Panaeus* sp. External, appendages and life history.

A brief account of Cephalization, integument and its significance.

Comparative survey of morphology and evolutionary trends in Arachnida.

Trophy of insects Cockroach, Honeybee, mosquito, Housefly, Butterfly.

Respiration organs : Gills, Book gills, Trachea, book lungs.

Sense organs : Structure of simple eye, compound eye, Gustatory and tactile organs.

A brief account of different metamorphic pattern in insects. Neuroendocrine control of metamorphosis in *Bombyx mori*.

Social organization in insects example : Termites.

A brief account of economic importance of Arthropoda.

Role of insects in biological control

Apiculture (Rearing and collection of honey)

Prawn culture and rearing.

MOLLUSCA

2.1 General characters of the phylum and classification upto classes with suitable example.

General structure of the shell with reference to unio.

Type study Unio species External, digestive, respiratory circulatory and reproduction systems Life History.

Modification of foot: Chiton, Dentalium, Pila, Aplysia, Mytilus, Sepia and Octopus.

Economic Importance pearl culture, Mytilus culture (Shellfish culture), Chank and Lime industries.

Structure and systematic position of Neopalina.

ECHINODERMATA

3.1 General character and classification upto classes with suitable example.

3.2 Starfish-External, Digestive, water vascular system, Life History.

Structure and significance of the following larvae-Bipinnaria, Ophiopleuteus, Echinopleuteus and Auricularia.

4.0 MINOR PHyla

List of minor phyla with examples.

Salient features and biological importance of Rotifers.

PRACTICAL II

NONCHORDATA - PART II

ARTHROPODA

1. Peripatus, centipede, crustaceal larva-Nauplius, Zoea and Mysis.
2. Limulus, spider, praying mantis, termite queen, worker, soldier.
3. Mouth parts of honeybee, mosquito, butterfly and housefly.
4. Dissection of cockroach: Dissection and mounting of salivary apparatus.
5. Dissection of nervous system of cockroach.
6. Prawn-mounting of appendages.

MOLLUSCA

1. Specimens-Chiton, mytilus, sepia, aplysia, oyster, glochidium larva.
2. Shell pattern in Gastropod(snail), unio, ostrea, nautilus, patella, cypraea, murex, haliotis, dentalium and cuttle bone.
3. Dissection: Fresh water mussel-alimentary canal and mounting of pedal ganglia.

ECHINODERMATA

1. Specimens Starfish, brittlestar, seaurchin, cakeurchin, hearturchin, sea cucumber, sea lilly.
2. Larvae-Bipinnaria, ehinopluteus, pedicellaria.

SEMETER III

PAPER III - CHORDATA - PART I

UNIT I PROTOCHORDATA

Origin of Chordata

Balanoglossus Externals & modification of Coelome in three regions.

Tomaria Larva Structure & Polyogenetic significance.

Amphioxus Externals, Feeding, Circulatory & Excretory system

Ascidia Externals, Retrogressive metamorphosis.

UNIT II: AGNATHA

General characters.

Different between Hag fishes and Lampreys.

Significance of Ammocoete larva.

UNIT III : PISCES

General characters & classification upto orders

Interesting features of Dipnoi.

Accessory respiratory organs Anabas, clarias, & Heteropneustes.

Migration of Eel & Salmon Pisciculture culture of fishes (Inland & Marine fisheries)

Fish processing and Preservation.

Economic importance of Fishes.

UNIT IV - AMPHIBIA

General characters and classification of living orders with suitable examples.

Frog (Rano Sp.) Study of all systems except muscular system

Origin of Amphibia.

Neuro-endocrine control of Metamorphosis.

Parental care Pipa, Gastrothecus, Alytes and Ichthyophis.

UNIT V - REPTILIA

General characters and classification of living orders with suitable examples.

Terrestrial adaptation in Reptiles.

Adaptive radiation (Both extinct & extant)

General adaptation in snakes, poison apparatus, Venom and its effects.

Interesting features of turtle, crocodile, spehenodon(living fossil)

Economic importance of Reptiles.

UNIT VI : AVES :

General characters-Difference between Ratitae and carinatae.

Interesting features of Archaeopteryx.

Flight adaptation in Birds.

Migration in Birds Types and theories.

Ringing and Radi Collaring techniques.

Economic importance of Birds.

BIO DIVERSITY:

Hammer-headed shark, Exocoetus, Latimaria.

Bull-frog, Salamander

Draco, Indian python.

Sparrows, Crow, Eagle.

PRACTICAL III

PROTOCHORDATA

1. Museum specimen and slides of Balanoglossus, T.S. through proboscis, Ascidian, Museum specimen and slides of Ampioxus, T.S. through pharynx and intestine.

CYCLOSTOMATA

Specimen of Petromyzon, Myxine and Ammocoetus larva.

PISCES

Speciman of Narcine, Mylobatis, Pristis, Trygon, Ostracion, Muraena, Pleuronectes, Diodon, Tetradon, Hippocampus (male and female) and Echeneis(Any six of these.)

Accesory respiratory organs in Anabas, Clarias and Heteropheustes.

Dissection of Shark(Scoliodon Sp.) or any fish.

Afferent branchial system.

Origin and distribution of glossopharyngeal and vagus nerves.

Mounting of brain (major dissection).

AMPHIBIA

Specimens of Bufo, Hyla, Amblystoma, Axolotl larva; Necturus and Ichthyophis.

Skeleton of frog: Skull, vertebral column, pectoral and pelvic Girdles, forelimb and hind limb bones.

DISSECTION OF FROG

Origin and distribution of trigeminal nerve.

Mounting of brain (major dissection).

Mounting of hyoid apparatus, pectoral girdle and pelvic girdle.

REPTILIA

Speciman of Turtle, Chameleon, Varanus, Draco and Phrynosoma.

Snakes : Hydorphis Sea snake, cobra, Krait and viper : Poison apparatus.

Study of carapace and plastron of tortoise/turtle.

AVES

Ecological adaptations-Duck, Eagle, Crow, Parrot, Hen, Pigeon

Skeleton : Skull, heterocoelous vertebra, synsacrum, sternum, pectoral girdle, pelvic girdle and limb bones.

SEMESTER IV

MAMMALS, COMPARATIVE ANATOMY, HUMAN ANATOMY

UNIT I: MAMMALS

1. General characters and classification up to orders with suitable examples.
2. Interesting features of Prototheria, Metatheria, Cetacea, Chiroptera, Proscodida, Carnivora, Insectivora, Ungulata and Primates.
3. Dentition in Mammals: Evolution of molar tooth.

UNIT II - COMPARATIVE ANATOMY

1. Evolutionary trends in the heart: Shark, frog, lizard, pigeon and rabbit.
2. Trends in the evolution of aortic arches in the vertebrate groups
3. Evolutionary trends in the respiratory system with special reference to modifications of the pharynx..
4. Evolutionary trends in the excretory system: Pro, meso and metanephros.
5. Evolutionary trends in the structure of the brain of shark, frog, Lizard, pigeon and rabbit.

UNIT III - HUMAN ANATOMY

1. Unique human characteristics.
2. Skeletal system(except bones of hand and foot).
3. A detailed account of digestive system including oral cavity.
4. Circulatory system Gross structure of the heart, Arterial system and venous system.
5. Respiratory system.
6. Excretory system.
7. Gross structure of brain and spinal cord, sense organs eye and ear.
8. Reproductive system male and female.

PRACTICAL IV

MAMMALS, COMPARATIVE ANATOMY, HUMAN ANATOMY

MAMMALS:

1. Specimens of Mongoose, bat, squirrel, rabbit, pangolin, hedge hog, monkey and loris.
2. Dentition : Lower jaw of rabbit, cat or dog, horse or cow, monkey or man.
3. Epidermal derivatives: Hair (Section of Skin), Hoof, Horns of cow or goat.

4. Rat dissection : Dissection of digestive, ciuculatory and urino genital system.
(Demonstration only).

5. COMPARATIVE ANATOMY

Sections of the skin of fish, frog, and mammal.

Hearts of shark, frog, pigeon and rat/rabbit.

Brains of shark, frog, pigeon and rat/rabbit.

HUMAN SKELETON

Skull, vertebrae, girdles and limb bones.

NOTE : Wherever specimens are not available, models (or photographs) can be shown.

SEMESTER V

PAPER V - HISTOLOGY & GENETICS

UNIT I: HISTOLOGY

Histological structure of the following mammalian organs: Tongue, stomach, small intestine, Liver, Pancreas, Spleen, Kidney, Testis, Ovary, Pituitary, Thyroid and Adrenal.

UNIT II - GENETICS

1. Heredity and Environment: Definition of genotype, phenotype, phenocopy, hereditary disease, norm of reactions, studies on human twins.

2. A brief account of Mendel and his works. Simple problems in Mendelism.

3. Deviations from Mendelism

Incomplete Dominance

Interaction of genes: Inheritance of comb shape in poultry.

Solving problems.

Linkage and crossing over, chromosome mapping.

Epistasis.

Multiple alleles: ABO and Rh blood groups inheritance and their applications.

Solving problems.

Sex linkage: Eye colour in *Drosophila*, colour blindness and Haemophilia in man.

Solving problems.

Multiple factor inheritance: Inheritance of skin colour in man.

4. Genetic determination Sex: XX-XY, XX-XO, and ZZ-ZW types. Genetic balance theory of Bridges.

Gynandromorphs and free martins.

5. Human Karyotyping: Non-disjunction of sex chromosomes in man.

Klinefelters and Turners Cri-du-chat syndrome.

6. Gene Mutations: Spontaneous and induced mutations, CIB Method of detection of mutations, chemical mutagens, Effects of radiation.

7. Concept of Gene: Classical concept, dominant and recessive, genome, fine structure of the gene-cistron, muton and recon.

Operon Concept, position effect.

8. Eugenics: Definition; positive and negative aspects, Genetic counselling eugenics and Euphenics.

9. Genetic Engineering and Biotechnology:

Endonucleases, Plasmids, cloning, Recombinant DNA technology.

DNA finger printing, DNA chip technology, DNA vaccines, PCR and DNA sequencing.

Applications of genetic engineering in pharmaceuticals, food technology, agriculture and industries. Insulin and Interferon.

Useful and harmful effects of Biotechnology.

PRACTICAL V

HISTOLOGY & GENETICS

HISTOLOGY :

Study of the following mammalian organs: Tongue, Stomach, Testis, Ovary, Pituitary, Thyroid and Adrenal.

GENETICS :

Problems for solving problems :

1. Monohybrid & Dihybrid inheritance.
2. Sex linked inheritance in *Drosophila*
3. Sex comb mounting in *Drosophila*
4. Blood group in man.
5. Male and Female identification + Syndrome identification (*Drosophila*).

Paper VI

CELL BIOLOGY-IMMUNOLOGY & ENVIRONMENTAL BIOLOGY

UNIT I: CELL BIOLOGY-IMMUNOLOGY

1. Principles of light, phase contrast and Electron Microscope.
2. Ultra structure and functions of plasma membrane: Theory regarding the structure of plasma membrane-Singer and Nicolson model. Cell-Cell interaction, surface markers, Cell fractioning, principles and application of Centifugation.
3. Parthenogenesis: Definition, Types; Arrhenotoky, Thelytoky, Amphytoky and cyclical with suitable examples, Artificial Parthenogenesis.
4. Biology of Cancer: Definition, General properties of Cancer cells, Carcinogens, structural and metabolic variations in cancer cells, Prevention and control-Surgical, chemotherapy, radiotherapy and Gene therapy.
5. Defence against diseases: Production of monoclonal and polyclonal antibodies, role of B and T lymphocytes, primary and secondary immunity and immunization. Hypersensitivity or allergic reactions and auto-immune diseases.
6. Acquired Immuno Deficiency Syndrome: Causes, Immunological basis, preventive measures; HIV test, ELISA & Westemblot test.
7. Transplantation : Organ transplantation, graft rejection, chemotherapy immuno-suppressors; plastic surgery and cornea grafting, Stem cells and organ culture.

UNIT II - ENVIRONMENTAL BIOLOGY:

1. Introduction, sub-divisions and scope of ecology.
2. Concepts of Habitat and Niche. Niche: Definition Types Spatial, trophic and multidimensional.
Habitat: Definition-microhabitat and macrohabitat.
3. Abiotic factors: Principles of limited factors. Liebig's law of minimum. Shelford's law of tolerance, Combined law concept.
4. Ecological factors : Temperature thermal stratification, Range of tolerance, poikilothermy and homeothermy. Light Distribution, Ecological effects, Photoperiodism and Bioluminescence.
5. Energy flow in the ecosystem: Concept of productivity, Laws of thermodynamics.
6. Population Ecology: Population density, Natality, Mortality, Population growth, Biotic potential, Population regulation, Human Population explosion.
7. Community Ecology: Intra and inter-specific interactions-Neutral (Neutralism) positive (mutualism, proto-cooperation and commensalisms) and negative (antibiosis, exploitation, competition).
8. Pollution: Definitions, types-water, soil and air pollution, with Reference to industrial, thermal, organic and inorganic pollutants. Bioremediation-Phytoremediation, Biomining.
9. Radiations and chemicals hazards: Thermal power projects, Measuring of disposal,

ozone layer, Green-house effect, global Warming.

10. Wildlife conservation and its management; Red data book, Endangered species, Major wild life sanctuaries and national parks of India. Major organizations involved in wild life conservation. Chipko and Appiko movements.

PRACTICAL VI

CELL BIOLOGY

1. Squash preparation-Grass hopper testis for meiosis stages, onion root-tip for mitosis stages.

2. Salivary gland chromosomes-Drosophila or Chironomous larva.

Blood smear preparation.

Units.

ECOLOGY:

Analysis of water samples:

1. Estimation of Salinity

2. Oxygen

3. Organic matter and

4. pH (titrimetric / pH meter. If available.)

Units.

ECOLOGICAL ADAPTATIONS

Ecological adaptations in the following examples:

1. Tubicolous Worms: Arenicola, Chaetopterus, Sabella.

2. Burrowing forms: Dentalium, Amphioxus, Balanoglossus

3. Sedentary forms: Sea anemone, Lepas, Balanus, Ascidian

4. Passive flight adaptation: Exocoetus, Rhacophorus, draco

5. Animal Associations:

Colonial forms: Physalia, Honey bee, Termite

Parasitism: Tapeworm, Sacculina or Crab

Faculative mutualism: Hermit crab with sea anemone

Mimicry camouflage: Stick insect. Leaf insect, Chameleon.

SEMESTER VI

PAPER VII

DEVELOPMENTAL BIOLOGY & ORGANIC EVOLUTION

DEVELOPMENTAL BIOLOGY:

1. Theories of development Epigenetic, Preformation, Von Baers Law, Biogenetic Law.
2. Types of cleavage based on distribution and amount of yolk.
3. Mosaic and regulative eggs, Determinate and indeterminate Development.
4. Pattern of development Oviparity, Ovoviviparity and Viviparity with examples.
Parthenogenesis Types with examples.
5. Cleidic egg and its evolutionary significance.Example: Hens egg.
6. Comparitive account of Blastula in Amphioxus, Frog and chick
7. Presumptive organ forming areas and fate maps of frog and chick.
8. Process of gastrulation in Amphioxus, Frog and Chick.
9. Organogenesis Chordogenesis, neurogenesis and mesodermal Differential in frog.
10. Role of organizers in development. Transplantation experiments of Spemann and Mangold, Chemistry of organizers, Homeotic genes.
11. Foetal membranes in chick, their formation,Structure and function.
12. Reproductive cycles-estrous and menstrual cycle and their Regulation.
13. Placentation Yolk sac, allantonic placenta, deciduate and Nondeciduate placenta.
14. Morphological and histological types of placenta and gestation period with suitable examples.

ORGANIC EVOLUTION

1. Theories of organic evolution:

Lamarckism, Darwinism

Critical account of Darwinism.

Neo Darwinism

Elementary forces of evolution; Mutation, selection and genetic drift. Population genetics and evolution: Hardy-Weinberg law, Origin of New species. Role of isolation.

2. Evidences for evolution :

1. Anatomical and morphological, serological and embryological.

2. Palaeontological evidences;

Fossils: Definition, their importance, formation, types of fossils.

Dating of fossils: Uranium lead method, potassium-argon method, radio carbon method
geological time scale-Eras, periods, Epochs with major fauna of each period.

3. Zoogeographical evidence:

Continental drift.

Distribution of animals, isolation, mechanisms and speciation.

III: 1. Evolution of Horse: Hyracotherium, Mesotherium, Meritherium, Equus.

2. Evolution of modern man: Australopithecus, Ramapithecus, Java man, Peking man, Neanderthal Man, Cromagnon Man.

PRACTICAL VII

DEVELOPMENT BIOLOGY AND ORGANIC EVOLUTION

Observation of Slides:

1. Frog: Cleavage, Blastula, Gastrula, Neurula, Chick: stages

Mammal: T.S. of mammalian uterus and fallopian tubes for histological details.

Placenta: Morphological types (Cotyledonary and Deciduate).

Histological types: (epithelio-chorial, haemochorial and haemo-endothelial).

2. Organic evolution:

Study of Homologous organs:

Forelimb of Frog and Bird

Mouthparts of Cockroach and Mosquito

Serial Homology: Appendages of prawn

Study of Analogous organs: Vertebrate eye and cephalopod eye, wing of Bird and insect.

Study of Vestigial Organs: Appendix, coccyx, molar tooth study of fossils.

III. Whole mount preparations: Fish scales, Coelenterate Colonies,
mouth parts of insects.

PAPER VIII

ANIMAL PHYSIOLOGY & ANIMAL BEHAVIOUR

UNIT I: PHYSIOLOGY:

1. Homeostasis: Maintenance of constant internal environment and the role of feedback mechanisms.

2. Digestion: Control of digestive secretions, common gastro-intestinal disorders in man- hyperacidity, Ulcer, Jaundice, gall stones, cirrhosis of liver. Endoscopy. Role of microorganisms in digestion in Ruminants and Termites.

3. Circulation: Transport of respiratory gasses, role of respiratory pigments, exchange of gasses between and cells, Hamburgers phenomenon.

Lymphatic system.

Disorders-(high and low B.P.) Angina pectoris, Mitral stenosis, Coronary thrombosis, cerebral hemorrhage, Anaemia, Leukemia, ECG, Echocardiogram, Angioplasty, Bypass Surgery.

4. Respiration: Respiratory quotient, Oxygen Dissociation curve and its significance.

Bronchial disorders: effects of smoking Carbon monoxide poisoning and silicosis.

5. Excretion and Osmoregulation: Ammono telism, Ureotelism and uricotelism.

Formation of ammonia, urea and uric acid, composition of normal urine.

Disorders: Nephritis, Ketosis, Significance of dialysis.

Ionic balance in *Artemia salina*, teleosts (fresh water and marine Elasmobranchs and Migratory eel.

Water balance in Turtle, Camel and man.

6. Thermoregulation: Poikilotherms and homeotherms, Ecto and endotherms i.e., Steno and eurythermic animals. Range of temperature tolerance and behavioural adaptations. Hibernation and aestivation. Role of Hypothalamus in temperature regulation.

7. Muscle contraction: Ultra structure of skeletal muscle-sarcomere.

Chemical composition of muscle fibre.

Physico-chemical changes during muscle contraction, sliding filament theory.

8. Physiology of Nerve conduction: Axonal and synaptic transmission.

Physiology of sense organs vision hearing, balancing and olfaction.

Endocrine regulation hormonal interactions with reference to homeostasis Thyroid, parathyroid and adrenals.

Signal transduction, C.T. Scan, MRI.

UNIT II - ANIMAL BEHAVIOUR:

Unit II: ANIMAL BEHAVIOUR:

1. Introduction to animal behaviour, Historical Perception, Aims and objectives. 1.hr.
2. Stereotyped behaviours – Taxis, Kinesis Reflexes, Instincts-with Suitable examples. 2hrs.
3. Learning – imprinting and habituation, Trial and error learning. 3hrs.
4. Animal communication – functions of signals, odours, sounds and light.
5. Social Organization- origin and evolution of social organization in Primate society. Ex.. Monkey. 2hrs.

PRACTICALS VIII

PHYSIOLOGY EXPERIMENTS

- 1) Organic constituents of protoplasm – Tests for glucose, Sucrose, Starch and proteins
 - 2) Nitrogenous wastes – Tests for ammonia, urea and uric acids.
 - 3) Effects of temperature on heartbeat of fresh water mussel.
 - 4) Oxygen consumption by crab.
 - 5) Salt loss and salt gain by crab.
 - 6) Quantitative estimation of amylase activity (Ptyalin)
 - 7) Total Glycogen in muscle (anthrocin method)
 - 8) Detection of abnormal excretion of sugar, albumin, ketone in human urine.
- ii) Micro technique: Preparation of slides and block making and paraffin sectioning.
- iii) Animal behaviour:
report on:
Project A) Eco-behavioral adaptation: Deep sea fishes,
Bio-Luminescence, Migratory fishes, Birds, Desert Fauna