

Govt. College, Ropar

Department of Zoology

Class B.Sc. 1st Sem. (Session 2019-2020)

Paper-I : Cell Biology

Paper-II : Biodiversity 1

| Week | Lesson scheduled |
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| 1 st | Principles of light and electron microscopes fixation and fixatives, staining techniques (single and double). |
| 2 nd | Plasma membrane: Structure, osmosis, active and passive transport, endocytosis and exocytosis. |
| 3 rd | Organisation of Cell: Extra nuclear and nuclear ultra structure and functions of cell organelles. Endoplasmic reticulum : Structure, types and associated enzymes. Mitochondria: Structure, mitochondrial enzymes and the role of mitochondria in respiration. |
| 4 th | Golgi Complex : Structure and functions. Ribosomes: Types of ribosomes, their structure and functions. |
| 5 th | Nucleus: Structure and functions of nuclear membrane, nucleolus and chromosomes. |
| 6 th | Lysosomes: Polymorphism and their function. Centrosome : Structure and functions. |
| 7 th | Protozoa: Classification upto orders with brief ecological note and economic importance of the following: <i>Entamoeba</i> , <i>Trypanosoma</i> , <i>Giardia</i> , <i>Noctiluca</i> , <i>Eimeria</i> , <i>Opalina</i> , <i>Vorticella</i> , <i>Balantidium</i> and <i>Nyctotherus</i> . Detailed study of the following animal types: <i>Amoeba</i> , <i>Paramecium</i> and <i>Plasmodium</i> . Introduction to Parasitic Protozoa |
| 8 th | Porifera : Classification upto orders with brief ecological note and economic importance of the following: <i>Grantia</i> , <i>Euplectella</i> , <i>Hyalonema</i> and <i>Spongilla</i> . Detailed study of the following animal types: <i>Sycon</i> |
| 9 th | ● MST |
| 10 th | ● MST |

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| 11 th | <p>Coelenterata - Classification upto orders with brief ecological note and economic importance of the following: <i>Hydra, Sertularia, Plumularia, Obelia, Tubularia, Bougainvillea, Porpita, Velella, Physalia, Rhizostoma, Millipora, Aurelia, Alcyonium, Tubipora, Zoanthus, Metridium, Madrepora, Favia, Fungia</i> and <i>Astrangia</i></p> <p>Detailed study of the following animal types: <i>Obelia</i></p> |
| 12 th | <p>Platyhelminthes: Classification upto orders with brief ecological note and economic importance of the following: <i>Dugesia, Schistosoma</i> and <i>Echinococcus</i>.</p> <p>Detailed study of the following animal types: <i>Fasciola, Taenia</i></p> |
| 13 th | <p>Aschelminthes: Classification upto orders with brief ecological note and economic importance of the following: <i>Ascaris, Oxyuris</i> and <i>Wuchereria</i></p> <p>.Detailed study of the following animal types: <i>Ascaris</i>,</p> <p>Parasitic adaptations in Helminths</p> |
| 15 th | <p>Annelida: Classification upto orders with brief ecological note and economic importance of the following: <i>Nereis, Polynoe, Eunice, Arenicola, Aphrodite, Amphitrite, Chaetopterus, Tubifex</i> and <i>Pontobdella</i>.</p> <p>Detailed study of the following animal types: <i>Pheretima</i> (Earthworm)</p> |



Prof. Manjit Kaur Manchanda

Head of department

Dept of Zoology



Principal

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Class B.Sc. Semester-II (Session 2019-20)

Biodiversity - II and Ecology

| Week | Lesson scheduled |
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| 1 st | Arthropoda: Classification upto orders with ecological notes and economic importance (if any) of the following: <i>Peripatus, Prawn, Lobster, Cancer (Crab) Sacculina, Eupagurus (Hermit crab), Lepas, Balanus, Apis, Lepisma (Silver fish), Schistocerca (Locust), Poeciloceris (AK Grasshopper), Gryllus (Cricket), Mantis (Praying Mantis)</i> |
| 2 nd | <i>Cicada, Forficula (Earwig), Dragon fly, termite queen, bug, moth, beetle, Polistes, (Wasp), Bombyx (Silk moth), Millipede, Scolopendra (Centipede), Palamnaeus (Scorpion), Aranea (Spider) and Limulus (King crab).</i> |
| 3 rd | Detailed study of the following animal types: <i>Periplaneta (cockroach), Prawn</i> Social organizations in insects (honey bee and termite) |
| 4 th | Mollusca: Classification upto orders with ecological notes and economic importance (if any) of the following: <i>Chiton, Anodonta, Mytilus, Ostrea, Cardium, Pholas, Solen (Razor fish), Pecten, Haliotis, Patella, Aplysia, Doris, Limax, Loligo, Sepia, Octopus, Nautilus shell and Dentalium.</i> |
| 5 th | Detailed study of the following animal types: <i>Pila</i> Classification upto orders with ecological notes and economic importance (if any) of the following: <i>Echinus, Cucumaria, Ophiothrix and Antedon.</i> |
| 6 th | ● MST |
| 7 th | ● MST |
| 8 th | Detailed study of the following animal types: <i>Asterias (Starfish)</i> and Echinoderm larvae Classification upto orders with ecological notes and economic importance (if any) of the following: <i>Balanoglossus</i> |
| 9 th | Detailed study of the following animal types: <i>Balanoglossus</i> - External characters and affinities. |
| 10 th | Ecology : Subdivisions and scope of ecology. Ecosystem : Components, ecological energetics, food web, introduction to major ecosystems of the world. |
| 11 th | Ecological factors : Temperature, light and soil as ecological factors. Nutrients : Biogeochemical cycles and concept of limiting factors. Ecological adaptations: Morphological, physiological and behavioural adaptations in animals in different habitats. |
| 12 th | Environmental education : Importance of Biodiversity. Population : Characteristics and regulation of population. |
| 13 th | Inter and Intra specific : Competition, predation, parasitism, relationships commensalisms & mutualism. Natural resources : Renewable and non-renewable natural resources and their conservations. |
| 14 th | Environmental degradation: Causes, impact and control of air, soil, water and noise pollution (in general). |


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