**Post Graduate Govt. College for Girls, Sector-42, Chandigarh**

**Teaching Plan for Bachelors ( Third and Fifth Semester) and PostGraduate (Third Semester) 2020-2021**

**Teacher: DR. RASHMI KOHLI**

**Class: B.Sc IInd year Paper-A+B Chordates and Evolution, Biochemistry and Physiology**

**M.Sc IInd year Paper –XIII Cell and Molecular Biology**

**B.Sc IIIrd year Paper –A Development Biology and Genetics**

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| **S. No** | **Dates** | **Topics to be Covered** |
| Week 1 | 03/08/2020 – 08/08/2020 | B.ScIInd- Introduction to Chordates.  B.Sc-IIIrd – Asexual Reproduction , Parthenogenesis.  M.Sc IInd –Plasma Membrane, model membranes. |
| Week 2 | 10/08/2020 – 14/08/2020 | B.ScIInd- Herdmania-Digestive, Respiratory System .  B.Sc-IIIrd – Sexual Reproduction-Gametogenesis  M.Sc IInd –Proteins in membranes, Na/K Pump. |
| Week 3 | 17/08/2020 – 22/08/2020 | B.ScIInd- Herdmania-Circulatory, Reproductive System .  B.Sc-IIIrd – Sexual Reproduction-Fertilization  M.Sc IInd- Glycoconjugates, Liposomes, Ion Transport. |
| Week 4 | 24/08/2020 – 29/08/2020 | B.ScIInd- Herdmania-Excretory, Respiratory System .  B.Sc-IIIrd – Sexual Reproduction-Clevage  M.Sc IInd- Endoplasmic Reticulum |
| Week 5 | 31/08/2020-05/09/2020 | B.ScIInd- Herdmania-Tadpole Larvae.  B.Sc-IIIrd – Sexual Reproduction-Blastulation  M.Sc IInd- Golgi Bodies. |

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| Week 6 | 07/09/2020 – 12/09/2020 | B.ScIInd- Herdmania: Characters of Tadpole Larvae  B.Sc-IIIrd – Sexual Reproduction: types of eggs  M.Sc IInd –Secretory Pathway |
| Week 7 | 14/09/2020 – 19/09/2020 | B.ScIInd- Branchiostoma : Introduction  B.Sc-IIIrd -Development in Herdmania  M.Sc IInd –Endocytic Pathway |
| Week 8 | 21/09/2020 – 26/09/2020 | B.ScIInd- Branchiostoma- Digestive system  B.Sc-IIIrd -Development in Herdmania  M.Sc IInd- Protein Sorting |
| Week 9 | 28/09/2020 – 03/10/2020 | B.ScIInd- Branchiostoma-Respiratory system, Circulatory, Excretory, Reproductive system  B.Sc-IIIrd –Development in Branchiostoma  M.Sc IInd- Mutations |
| Week 10 | 05/10/2020- 10/10/2020 | B.ScIInd- Respiratory system, Frog Digestive System  B.Sc-IIIrd – Growth and Metamorphosis  M.Sc IInd- Fixation and staining techniques |
| Week 11 | 12/10/2020 – 16/10/2020 | B.ScIInd- Blood, Frog-Respiratory, Circulatory system  B.Sc-IIIrd – Fate maps of Frog embryos  M.Sc IInd –Cell-cell signalling pathways |
| Week 12 | 19/10/2020 – 24/10/2020 | B.ScIInd- Heart, Frog-Reproductive, Excretory system  B.Sc-IIIrd - Fate maps of Chick embryos  M.Sc IInd –Cytoskeletal structures |
| Week 13 | 27/10/2020 – 30/10/2020 | B.ScIInd- Enzymes  B.Sc-IIIrd -Fate maps of Rabbit embryos  M.Sc IInd- Cell division |
| Week 14 | 03/11/2020 – 07/11/2020 | B.ScIInd- Carbohydrate Metabolism  B.Sc-IIIrd –Foetal Membranes, their formation and role  M.Sc IInd- Modifications and abnormalities of cell division |
| Week 15 | 09/11/2020- 12/11/2020 | B.ScIInd- Parental care, migration  B.Sc-IIIrd – Mammalian placenta-formation ,types and function  M.Sc IInd- Chromosome movements |
| Week 16 | 16/11/2020 – 21/11/2020 | B.ScIInd- Digestion  B.Sc-IIIrd –Juxtacrine, paracrine , gap junctions  M.Sc IInd- Revision |
| Week 17 | 23/11/2020- 28/11/2020 | B.ScIInd- Revision  B.Sc-IIIrd – Revision  M.Sc IInd- Revision |

**Post-Graduate Govt. College for Girls, Sector-42, Chandigarh**

**Teaching Plan (Odd Semester) Session: 2020-2021**

**Class: B.Sc.- III & M.Sc.- II Name of the Teacher: Dr. SANJAY KUMAR JHA**

**Subject: ZOOLOGY Paper: B.Sc.- III (Paper- B) & M.Sc.- II (Paper- XIV)**

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| **S. No.** | **DATES** | **TOPICS TO BE COVERED** |
| Week-1 | 03/08/2020 – 08/08/2020 | For new admissions Help-Desk duties (3rd - 8th August, 2020). |
| Week-2 | 10/08/2020 – 14/08/2020 | B.Sc.- III: Introduction to Inland Fisheries & Aquaculture.  M.Sc.- II: Introduction to Instrumentation and Methodology. |
| Week-3 | 17/08/2020 – 22/08/2020 | B.Sc.- III: Concept of Aquaculture in Culture & Capture fishery.  M.Sc.- II: Concept of Microscopy, its various Types and Working. |
| Week-4 | 24/08/2020 – 29/08/2020 | B.Sc.- III: Extensive, Intensive & Semi-Intensive Aquaculture, Pen culture and Cage culture.  M.Sc.- II: Concept of Microscopy (Contd.). |
| Week-5 | 31/08/2020 – 05/09/2020 | B.Sc.- III: Various components of Aquaculture.  M.Sc.- II: Simple & Compound Microscopy, its principal, components and working. |
| Week-6 | 07/09/2020 – 12/09/2020 | B.Sc.- III: Morphology of some typical fishes (Catla, Catfish, Eel & Perch).  M.Sc.- II: Phase-Contrast & Fluorescent Microscopy, its principal and working. |
| Week-7 | 14/09/2020 – 19/09/2020 | B.Sc.- III: Induced Breeding Technique.  M.Sc.- II: Interference, Polarising & Dark-Field Microscopy, its principal and working. |
| Week-8 | 21/09/2020 – 26/09/2020 | B.Sc.- III: Characters of various Culturable fishes – IMCs, Saltwater fishes, Exotic fishes and Air-breathing fishes.  M.Sc.- II: Electron Microscopy (SEM & TEM), its principle, components and working. |
| Week-9 | 28/09/2020 – 03/10/2020 | B.Sc.- III: Bionomics of *Labeo rohita, Catla catla, Cirrhinus mrigala* and *Wallago attu*.  M.Sc.- II: Polymerase Chain Reaction (PCR), its principle, working and applications. |
| Week-10 | 05/10/2020 – 10/10/2020 | B.Sc.- III: Structure of mouth of different fishes in relation to their feeding habits.  M.Sc.- II: Spectrophotometry and Colorimetry – Its Principle, Working and Applications. |
| Week-11 | 12/10/2020 – 16/10/2020 | B.Sc.- III: Food value of a fish (Vitamins, Amino acids, and Minerals).  M.Sc.- II: Chromatography, its principle and working, various types of Chromatography- Paper, TLC, Gas, Gel permeation, Ion exchange, HPLC and Affinity chromatography. |
| Week-12 | 19/10/2020 – 24/10/2020 | B.Sc.- III: Exotic fishes- History, Introduction & Morphology.  M.Sc.- II: Types of Chromatography (Contd.). |
| Week-13 | 27/10/2020 – 30/10/2020 | B.Sc.- III: Exotic fishes- Their role in fish culture and various impact on native fish fauna.  M.Sc.- II: Electrophoresis, its principles, working and applications, Types of Elcetrophoresis (Paper, Agarose gel, SDS-PAGE), Isoelectric focusing, detection of plasmid and Phage-DNA. |
| Week-14 | 03/11/2020 – 07/11/2020 | B.Sc.- III: Pond Culture: Construction of pond and Types of pond.  M.Sc.- II: Cell fractionation method and Principles of Centrifugation, different types of Centrifugations and their various applications. |
| Week-15 | 09/11/2020 – 12/11/2020 | B.Sc.- III: Pond Culture: Hydrological factors of water and soil of a fish pond, fertilization of pond and its maintenance.  M.Sc.- II: Tissue culture techniques, cell culture, organ culture, aseptic techniques, sterilization techniques, factors affecting cell growth *in vitro*. |
| Week-16 | 16/11/2020 – 21/11/2020 | B.Sc.- III: Aquatic weeds and their control (both biological and chemical).  M.Sc.- II: Radioisotopes, radioactive isotopes and its Half-life, Radiation dosimetry, Cerenkov radiations, Liquid scintillation counter, Autoradiography- its principle and applications. |
| Week-17 | 23/11/2020 – 28/11/2020 | Revision in both Classes/ Completion of remaining topics….! |

Also started taking regular teaching classes (5 days a week) of B.Sc.-I (Paper A+B) from 10th September, 2020 onwards along with above mentioned scheduled classes of B.Sc.-III and M.Sc.-II.

**Post-Graduate Govt. College for Girls, Sector-42, Chandigarh**

**Teaching Plan (Odd Semester) Session: 2020-2021**

**Class: B.Sc.- I (Semester 1st) Name of the Teacher: Dr. SANJAY KUMAR JHA**

**Subject: ZOOLOGY Paper: (Paper A+B)**

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| **S. No.** | **DATES** | **TOPICS TO BE COVERED** |
| Week-1 | 01/09/2020 – 05/09/2020 | No classes due to Admission process going on. |
| Week-2 | 07/09/2020 – 12/09/2020 | No classes have been started because Student’s group not formed. |
| Week-3 | 14/09/2020 – 19/09/2020 | Introduction to Invertebrates, various Phylum and representative organisms along with their characteristic features. |
| Week-4 | 21/09/2020 – 26/09/2020 | Introduction to Phylum Platyhelminthes. General type study of *Fasciola hepatica* (the liver fluke). |
| Week-5 | 28/09/2020 – 03/10/2020 | General type study of *Taenia solium* (the pork tape worm).  Introduction to Phylum Protozoa.  General types study of *Amoeba proteus*. |
| Week-6 | 05/10/2020 – 10/10/2020 | General type study of *Paramaecium caudatum*.  General type study of *Plasmodium vivax*. |
| Week-7 | 12/10/2020 – 16/10/2020 | Introduction to Phylum Porifera and General type study of *Scypha*. |
| Week-8 | 19/10/2020 – 24/10/2020 | Introduction to Phylum Coelenterata and General type study of *Obelia*. |
| Week-9 | 27/10/2020 – 30/10/2020 | Introduction to Phylum Aschelminthes and General type study of *Ascaris lumbricoides* (the roundworm). |
| Week-10 | 03/11/2020 – 07/11/2020 | Introduction to Phylum Annelida and General type study of *Pheretima posthuma* (the earthworm). |
| Week-11 | 09/11/2020 – 12/11/2020 | Introduction to Microscopy (Light and Electron Microscopes);  Various types of Staining techniques. |
| Week-12 | 16/11/2020 – 21/11/2020 | Introduction to Cell Biology and Various types of Cell Organelles.  Study of Cell Membrane, Fluid Mosaic Model concept. |
| Week-13 | 23/11/2020 – 28/11/2020 | Study of Mitochondria and Endoplasmic Reticulum and their types and various functions. |
| Week-14 | 01/12/2020 – 05/11/2020 | Study of Golgi Complex, Lysosomes and Ribosomes and their types and various functions. |
| Week-15 | 07/12/2020 – 12/11/2020 | Study of Nucleus, Nucleosomes, its structure and functions. |
| Week-16 | 14/12/2020 – 18/11/2020 | Study of Cancer cells, Oncogenes and its various properties functions. |
| Week-17 | 21/12/2020 – 26/11/2020 | Study of Immune System and the various types of cells involved. B-cells and T-cells, Antigens and Antibodies, Immunoglobulins and its types, functions and properties of Immunity. |

**B.Sc Ist Year (Paper A+B) = Dr. Sanjay Kumar Jha**

**B.Sc IInd Year (Paper A+B) = Dr. Rashmi Kohli**

**B.Sc IIIrd Year (Paper A) = Dr. Rashmi Kohli**

**B.Sc IIIrd Year (Paper B) = Dr. Sanjay Kumar Jha**

**M.Sc IInd Year Paper XI = Dr. Rewa Rishi (Retd.)**

**Paper XII = Dr. Ruchi**

**Paper XIII = Dr. Rashmi Kohli**

**Paper XIV = Dr. Sanjay Kumar Jha**

**Paper XV = Dr. Neelima Talwar (Retd.)**