

## SYLLABUS 2021-2022

STANDARD: 12

SUBJECT: BIO-ZOOLOGY

MONTH	TOTAL NO OF CHAPTERS	UNIT	TOPICS	PRACTICALS
January	2	5 Molecular Genetics	Introduction 5.1. Gene as the functional unit of Inheritance 5.2. In search of Genetic material 5.3. DNA is the Genetic Material 5.3.1 Hershey and Chase experiment on T2 bacteriophage 5.5. RNA - World 5.6 Properties of genetic Material 5.7. Packaging of DNA helix 5.9. Transcription 5.9.1 Transcription unit and gene 5.9.2 Process of transcription 5.10. Genetic Code 5.10.1 Mutation and genetic code 5.12. Translation 5.12.1 Mechanism of Translation 5.13 Regulation of gene Expression 5.14. Human genome project 5.14.1 Goals and methodologies of Human Genome Project 5.14.2 Salient features of Human Genome Project 5.14.3 Application and future challenges 5.15. DNA finger printing Technique	9. tRNA 10. Homologous organs 11. Analogous organs



January		6 Evolution	<p>Introduction</p> <p>6.1 Origin of life</p> <p>6.2. Geological Time Scale</p> <p>6.3. Biological evolution</p> <p>6.5. Theories of biological evolution</p> <p>6.5.1 Lamarck's theory</p> <p>6.5.2 Darwin's theory of Natural selection</p> <p>6.5.3 Mutation theory</p> <p>6.5.4 Modern synthetic theory</p> <p>6.5.5 Evolution by anthropogenic sources</p> <p>6.5.6 Adaptive Radiation</p> <p>6.7. Hardy- Weinberg Principle</p>	
February	3	7 Human Health and Diseases	<p>Introduction</p> <p>7.1 Common diseases in Human beings</p> <p>7.1.1 Bacterial and viral diseases</p> <p>7.1.2 Protozoan diseases</p> <p>7.1.3 Fungal diseases</p> <p>7.1.4 Helminthic diseases</p> <p>7.2 Maintenance of Personal and Public Hygiene</p> <p>7.3 Basic concepts of Immunology</p> <p>7.3.1 Innate Immunity</p> <p>7.3.2 Acquired Immunity</p> <p>7.3.3 Immune responses</p> <p>7.3.4 Lymphoid organs</p> <p>7.3.5 Antigens</p> <p>7.3.6 Antibodies</p> <p>7.3.7 Antigen - Antibody interaction</p> <p>7.3.8 Vaccines</p> <p>7.3.9 Vaccination and immunization</p> <p>7.3.10 Hypersensitivity</p> <p>7.6 Adolescence - Drug and Alcohol abuse</p> <p>7.6.1 Addiction and dependence</p> <p>7.6.2 Effects of drugs and alcohol</p> <p>7.6.3 Prevention and control</p> <p>7.7. Mental health and Depression</p>	





February	8 Microbes in Human Welfare	Introduction 8.2 Microbes in industrial products 8.2.1 Antibiotic production 8.2.2 Fermented beverages 8.2.3 Chemicals, enzymes and other bioactive molecules 8.3 Microbes in sewage treatment 8.3.1 Microbial fuel cell (MFC) 8.5 Bioremediation 8.5.1 Microorganisms involved in bioremediation	12. X linked Disease  13. Autosomal Disease
	9 Applications of Bio technology	Introduction 9.1. Applications in medicine 9.1.1 Recombinant Human Insulin 9.1.2 Human alpha lactalbumin 9.1.3 Interferons 9.2. Gene therapy 9.3. Stem cell therapy 9.4. Molecular Diagnostics	