LESSON PLAN Biology 5th sem Mechanical

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| **DATE** | **Course code BSC-BIO-205G**  Class work 25 Marks Exam 75 Marks Total 100 Marks Duration of Exam 03 Hours |
| 1ST and 2nd 3rd week | * **UNIT–I** **Introduction to living world**: Concept and definition of Biology; Aspect of biology. Need to study biology. Characteristic features of living organisms; Cell theory, Structure of Prokaryotic and Eukaryotic cell. Distinguish between animal and plant cell. Concept of single celled organisms, Ecological aspects of single celled organisms, Types of microbes and their important properties. Economic importance of microbes. **Genetics** : Mendel’s laws of inheritance, Concept of allele. Concepts of recessiveness and dominance . Gene interaction , Epistasis. Cell division- Mitosis and Meiosis. Evidence of nucleic acid as a genetic material. Concept of genetic code, Central Dogma. |
| 4thand 5th week | * **UNIT–II Introduction to Biomolecules**: Definition, structure and important functions of carbohydrates (glucose, fructose, disaccharides, starch and cellulose), lipids (phospholipid, cholesterol), Amino acids.Proteins-structure and function. Primary secondary, tertiary and quaternary structure. Nucleic acid-Structure of DNA and RNA, types of RNA, Watson and Crick model of DNA |
| 6th,7th,8th week | * **UNIT–III Introduction to Genetic Engineering**: Concept of genetic engineering. Tools used in recombinant DNA Technology. Restriction enzymes and DNA modifying enzymes, ligases. Gene cloning; plasmid vector. Transgenic plants and animals |
| 9th,10th,11th week | * **UNIT–IV Applications of Biotechnology**: Applications of biotechnology in Agriculture, Medicine, Environment (sewage treatment), enzyme technology. Course Outcomes After studying the course, the student will be able to: Understand about living organisms, type of cells and microbes. Highlight the concepts of recessiveness and dominance during the passage of genetic material from parent to offspring Convey that all forms of life have the same building blocks and yet the manifestations are as diverse as one can imagine Identify DNA as a genetic material in the molecular basis of information transfer. |
| 12th week | * **Revision** |
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