**COURSE OUTCOMES**

**B.Sc - Biotechnology IInd year**

**Semester- III**

**Subject- Immunology (Theory+ Practical)**

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| **Co1.** | Describe History, scope of immunology. |
| **Co2.** | Critically analyse basic concepts of immunology i.e. B and T cells and organs of immune system. |
| **Co3.** | Evaluate general concepts of antigens and antibodies, their classification, types, different reactions between antibodies and antigens |
| **Co4** | Diagrammatically explain different types of immunity i.e primary and secondary immunity. |
| **Co5** | Illustrate Major histocompatility complexes and hypersensitivity and allergic reactions. |
| **Co6** | Elucidate different types of vaccines |

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**Subject Molecular Biology (Theory+ Practical)**

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| **Co1** | Explain briefly molecular aspects of life |
| **Co2** | Diagrammatically explain DNA as a genetic material |
| **Co3** | Describe DNA Replication in detail and its experimental proof |
| **Co4** | Critically explain features of Genetic code? |
| **Co5** | Illustrate Translation and regulation of gene expression. |
| **Co6** | Elucidate molecular mechanisms of DNA recombination in eucaryotes and prokaryotes. |

**CREDITS**- 3 **THEORY PERIODS OF 45 MINUTES EACH OF EACH PAPER PER WEEK OVER A SEMESTER**

**6 PRACTICAL PERIODS OF 45 MINUTES EACH PER WEEK OVER A SEMESTER**

**B.Sc - Biotechnology IInd year**

**Semester- IV**

**Subject- I Recombinant DNA Technology (Theory+ Practical)**

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| **Co1.** | Explain Recombinant DNA Technology, different tools involved in it |
| **Co2** | What are vectors and explain different types of vectors. |
| **Co3.** | Describe DNA transfer methods |
| **Co4** | What is PCR and explain different types of PCR. |
| **Co5** | Explain different DNA sequencing techniques, Their advantages and disadvantages . |
| **Co6** | Explain the Concept of gene mapping. |
| **Co7** | Describe different Gene Expression methods. |
| **Co8** | Give Applications of Recombinant DNA Technology. |

**Subject- Bioinformatics(Theory+ Practical)**

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| **Co1.** | Explain History, scope and Importance of Bioinformatics. |
| **Co2** | What is Genomics. Explain their types and importance in different fields of sciences. |
| **Co3.** | Describe proteomics, their techniques, their importance in biological sciences. |
| **Co4** | Critically explain different formats used in Bioinformatics i.e. BLAST and FASTA techniques and multiple sequence alignment. |
| **Co5** | Elucidation of predictive methods of DNA and Protein sequences, structural and functional databases for storing information of DNA and Protein sequences. |

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