BOOK REVIEW
MOLECULAR BIOLOGY AND GENETIC ENGINEERING

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This book is written in a very simple and easy style. It is up-to-date and exhaustive in covering the syllabus of B.Sc. III Botany & Zoology and M.Sc. previous Botany specially C.S.J.M.University Kanpur and all the Indian universities in the field of molecular biology and genetic engineering. This book has new efforts in the form of contents. It includes two sections. 1- Molecular biology 2- Genetic engineering. Molecular biology deals with the molecular basis of biological activity and is concerned with the study of molecules involved in life process. It is correlated with the other branches of biology such as Bio-chemistry, Genetics, Genetic engineering, Bio-informatics, computational biology, etc. Molecular biology includes central dogma, genetic engineering and molecular techniques.

On one hand in molecular biology authors has kept 18 chapters. These chapters are-Introduction of Molecular biology, Microscopy, Cytological Techniques, The Cell, Deoxyribonucleic Acid, Ribonucleic Acid, Gene, DNA is the Genetic Material, Genetic Code, Protein Synthesis, Replication, Translation, Regulation of Gene Expression, DNA Repair, Mutation, Chromosomal Aberration, Glossary.

On other hand Genetic Engineering is a technique, where genes are transferred from one cell to another to produce recombinant DNA. The recombinant DNA is used for the synthesis of valuable products such as an insulin, drugs, etc. In genetic engineering authors has kept 28 chapters. These are- Introduction of Genetic Engineering,

Concepts of Genetic Engineering, Methodology of Genetic Engineering, Construction of Recombinant DNA, Gene Cloning, Tools used in Genetic Engineering, Linking of Desired Gene with Vector DNA, Gene Cloning Vectors, In vitro Construction of pBR322, In vitro construction of Cosmid, Preparation of Desired DNA, Introduction of DNAs into Host Cells, Selection of Recombinants, Expression of Cloned Genes, Polymerase Chain Reaction (PCR), Blotting Techniques, DNA Sequencing, Molecular Markers and their Applications, Genomic Library, c DNA Libraries, Chromosome walking, Genetically Engineered Micro-organisms, Transgenic Plants, Transgenic Animals, Biohazards of Recombinant DNA Technology, Applications of Genetic Engineering, Glossary.

Major characteristics of the book are – examination oriented, easy to answer the questions, point by point description, hence easy to memories, neat diagrams, important topics are given as highlights.

In genetic engineering the topic is genetic engineered micro organisms which conclude its role. Micro organisms whose genome is manipulated through rDNA technology are called GEMOs genetically micro-organisms. Many bacteria Cyano-bacteria, Fungi, Yeast are genetically manipulated to use them in industries to produce several desired products. These products include 1- Health product 2- Inocula for agriculture 3- Inocula for pollution control 4- Single cell proteins.

Important applications of genetic engineering are discussed in the last chapter of this book which is very significant. For example source and function of interferon, source and function of health care products, source of GEMOs, gene therapy, pollution control and transgenic plants as bio-reactors is evidenced towards human welfare. This book inculcates outright category and is helpful for B.Sc., M.Sc. students of Molecular biology and genetic engineering.

The gracefully written book will appeal to the readers interested in molecular biology and genetic engineering who will enjoy browsing information on a wide variety of strange and useful techniques.