

Basic Experiments in Biotechnology

This book has been divided into four segments. First segment has introduction about biotechnology and its emerging fields. Second segment has 13 basic experiments for the students who are entering into the laboratory for the first time. In this segment, students will learn about the preparation of buffer and solutions, quantitative and qualitative tests about amino acids, protein, nucleic acids, (RNA & DNA) by different methods and isolation of casein protein from the milk. In the segment 2, we have elaborated about physiology. Here, the students will learn about expression of solutions in concentrations, determination of urine urea nitrogen, calculating acid number of fats, calculation of saponification number and average molecular weight of triacylglycerols, salting in, salting out and dialysis of proteins, determination of serum albumin, total cholesterol, etc., blood group analysis, Ouchterlony double diffusion test and determination of haemoglobin content by haemoglobinometer. The last segment has 28 experiments about biotechnology and biological techniques for microbiology, plant tissue culture, genetic engineering and industrial biotechnology. This book will extensively assist students, teachers and academicians to further extend their knowledge beyond the course work and related subject matter but onto the practical application to gain insights of what happening new in the present era of applied science.



Dr. Ashok K. Rathoure shares his knowledge and experience in the field of Environment Impact Assessment with a doctoral degree in Bioremediation for M/s En-vision Group, Surat. Previously he was associated with En-vision Enviro Engineers Pvt. Ltd. for EIA studies; Himachal Institute of Life Sciences Paonta and Beehive College of Ad. Studies Dehradun for teaching to Biotechnology, Microbiology, Biochemistry and other biosciences subjects. He is also associated as Editor-in-Chief for Octa Journal of Environmental Research, Managing Editor for Octa Journal of Biosciences and Executive Editor for Scientific India Magazine. Dr. Rathoure was born in 1983 in village Hariharpur and completed his basic education in Hariharpur, Tandiyawan and HarDOI. He came to Kanpur for M.Sc. and was moved to Pauri for M.Tech. (G.B. Pant Engineering College) and has travelled extensively in the major cities of Northern and Western India for his education and as a teacher, trainer and taught to widen the horizon of knowledge and to sharpen his intellect.



Dr. Smitha Rajesh has received her master degree in chemical engineering from SVNIT Surat in 2010 followed by doctorate degree (Doctor of Philosophy) from SVNIT Surat in Chemical Engineering. She has also received MBA degree in Operation Research (HRM) from IGNOU. Her area of research is chemical and environmental engineering.



Dr. Savita Goyal Aggarwal, working as Associate Professor, Department of Chemistry, Army Cadet College IMA (Dehradun) has received his master degree from Hemwati Nandan Garhwal (Central) University, Garhwal (MSc) in Chemistry followed by doctorate degree (Doctor of Philosophy) from, FRI University, Forest Research Institute, Dehradun in 2004.

