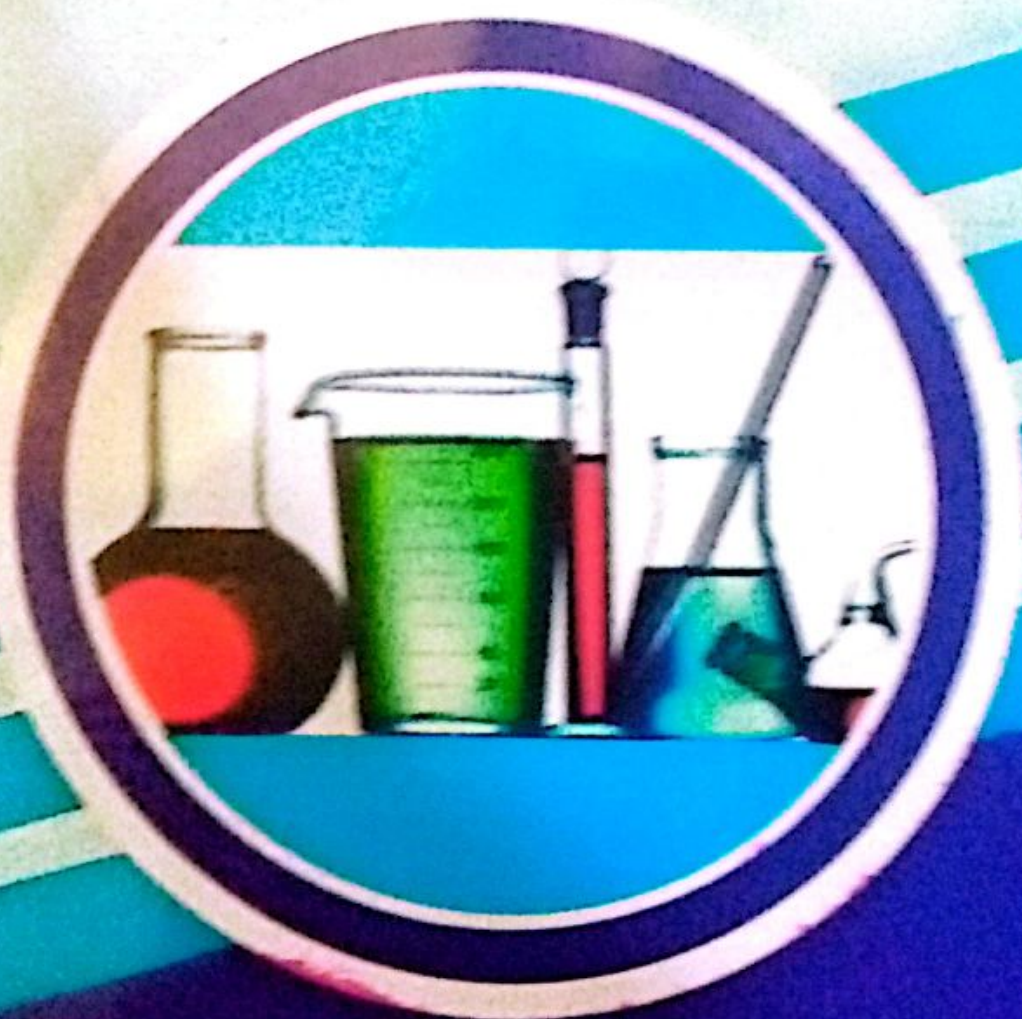




DEPARTMENT OF BIOCHEMISTRY

Faculty of Life Sciences, University of Ilorin, Nigeria



LABORATORY MANUAL FOR PRACTICAL BIOCHEMISTRY

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PREFACE

I am glad to present this edition of Laboratory Manual For Practical Biochemistry on behalf of the academic staff members of the Department of Biochemistry, Faculty of Life Sciences, University of Ilorin, Ilorin, Nigeria.

In August 2014, when I assumed the headship of the Department of Biochemistry, the need for increased emphasis on practical aspects of Biochemistry in all areas necessitated the design of Laboratory Manual for undergraduate curriculum.

The aim is to produce a 'text guide' that provides students basic appreciation of the underlying principles and practical strategies of the analytical and preparative techniques that are fundamental to the study and understanding of Biochemistry. Adequate attention has been given to those techniques that students often encounter in their practical classes. The content of this text were written in such a way that even the average students can read and understand.

Regarding the organization, the book consists of seven (7) sections. Section One deals with Basic Laboratory Ethics, presenting an overview of the departmental policy, laboratory ethics and instructions about results recording and presentation.

Section Two is divided into Practicals 1, 2 and 3 covering handling of experimental animals and preparation of solutions with exercises to assess students' understanding

Section Three presents Practical 4 which dwells on amino acids and proteins, highlighting their specific reactions and tests; Practical 5 is on absorption spectra of pure substances, determination of protein amounts in blood by Biuret method and estimation of urinary creatinine;.

Practical 6 describes tests for precipitation of proteins by heating, organic acids, mineral acids, ethanol and salts of heavy metals while Practical 7 dwells on isolation, purification and identification of amino acids and proteins employing paper chromatography, gel filtration chromatography and isoelectric point determination.

Section Four is on enzymes and it is divided into Practicals 8, 9, 10 and 11 with experiments ranging from pH effects on enzyme activity to specific reactivity for the recognition of some enzymes. Section Five has two Practicals (12 and 13) on vitamins. Section Six is divided into Practicals 14, 15, 16, 17 and 18 covering carbohydrate and nucleotide metabolism presenting tests for glucose, lactic acid, pyruvic acid and estimation of RNA while Section Seven is on lipid metabolism and is subsectioned into Practicals 19, 20, 21, 22, 23 and 24, covering solubility and qualitative tests on lipids, TLC, reactions of bile acids and pigments, determination of ketone bodies and cholesterol in serum.

On behalf of academic staff members of the Department of Biochemistry, I wish to appreciate the support and approval for the publication and production of this text by the Vice-Chancellor, Prof. Abdulganiyu Ambali, OON. The efforts of all academic and technical Staff of the Department of Biochemistry is also acknowledged.

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July, 2015
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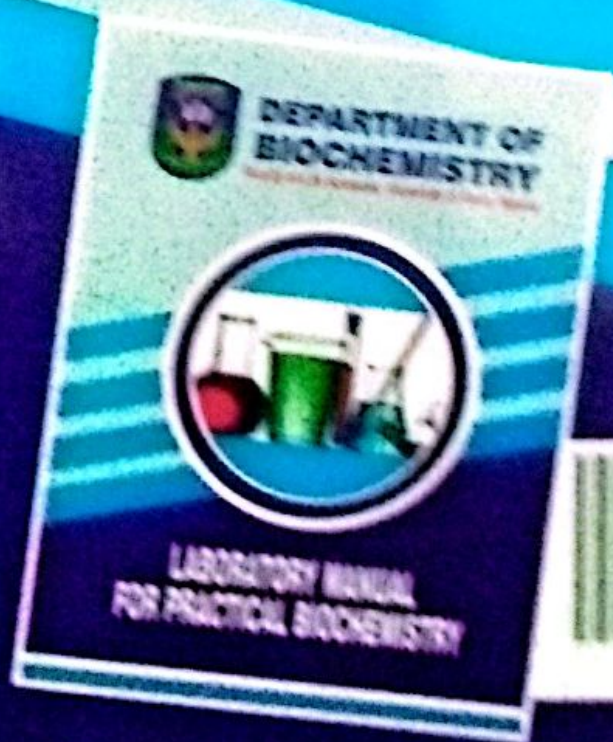
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