SYLLABUS FOR PHD ENTRANCE EXAMINATION 2017
SCHOOL OF BIO – CHEMISTRY

PART – A  

Marks 50

1. **Atoms and Molecules** – The Atomic Theory; Structure of an Atom; Quantum Theory; Atomic Spectra; Ionization Potential; Chemical Bonds; Secondary Bonds.

2. **Physical Properties of Molecules** – Diffusion and Osmosis; Buffers; Isomerism and Optical Activity.

3. **Carbohydrates** – Classification; Physical Properties; Biological Oxidation of Carbohydrates; Biomedical Importance of carbohydrates.

4. **Lipids** – Classification; Biological significance of lipids and fat metabolism.

5. **Amino Acids** – Structure and classification; Biosynthesis of amino acids; Catabolism of Amino Acid and Urea cycle.

6. **Proteins** – Chemical structure of proteins; Properties of protein; Biological significance of proteins; Mechanism of protein synthesis and glycoprotein’s.

7. **Nucleic acids** – Chemical Composition of Nucleic Acids; Properties of Nucleic Acids; Biological significance of Nucleic Acids; Biosynthesis of Nucleotides.

8. **Enzymes and Co-Enzymes** – Classification and nomenclature of Enzymes; Isolation of Enzymes; Physico-chemical Nature of Enzymes; Enzyme Kinetics; Mechanism of Enzyme Action and co-enzymes.

9. **Vitamins** – Classification and Bio-medical importance.

10. **Minerals** – Classification and Bio-medical importance.


PART – B

RESEARCH METHODOLOGY


Research Formulation – Defining and formulating the research problem - Selecting the problem - Necessity of defining the problem - Importance of literature review in defining a problem – Literature review – Primary and secondary sources – reviews, treatise, monographs-patents – web as a source – searching the web - Critical literature review – Identifying gap areas from literature review - Development of working hypothesis.


Reference Books:


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