

**P.B.SIDDHARTHA COLLEGE OF ARTS & SCIENCE**  
**DEPARTMENT OF CHEMISTRY**  
**M.Sc – CHEMISTRY (ORGANIC CHEMISTRY)**  
**III SEMESTER**

Paper Code & Title: 22CH OE 302 : BASIC BIO CHEMISTRY

No. of hours per week: 03

Total credits: 03

Total marks: 100

(Internal: 30 M & External: 70M)

Course: BASIC BIO CHEMISTRY (code: 22CH OE 302)		
S.No	COURSE OUTCOMES	PO'S
	The graduate will be able to	
1	Memorize the basic concepts related to chemistry in daily life like – chemistry Laboratory safety symbols, environmental chemistry, bioinorganic chemistry, vitamins, antibiotics and hormones.	2,7
2	Understand the concepts like chemistry Laboratory safety symbols, environmental chemistry, bioinorganic chemistry, vitamins, antibiotics and hormones.	1,2,6
3	Apply the knowledge gained in the concepts like chemistry Laboratory safety symbols, environmental chemistry, bioinorganic chemistry, vitamins, antibiotics and hormones in future job roles.	1,4,7

**Course Learning Objective(S):** The main objective of this paper is to give a basic and updated knowledge for the students on Chemistry Laboratory safety symbols – Meaning, Environmental Chemistry, Bioinorganic Chemistry, Biological functions of Hormones and Medicinal chemistry.

**Unit-I: Chemistry Laboratory safety symbols – Meaning:**

Corrosive, carcinogenic, Harmful, toxic, dangerous to environment, Explosive, flammable, Narcotic, Oxidizing, Lachrymatory, Radioactive, irritant, gases under pressure, general laboratory safety precautions.

**Unit-II: Environmental Chemistry:**

Ambient air quality standards, Acid rain, Smog, Greenhouse effect, Bhopal gas tragedy, Vishakhapatnam polymer industry tragedy, Renewable and Nonrenewable energy resources, DO, COD, BOD, Toxicity of lead, mercury, arsenic and Cadmium.

**Unit-III: Bioinorganic Chemistry:**

Essential elements, biological significance of Na, K, Mg, Ca, Fe, Metalloporphyrin – Structure and functions of hemoglobin, Myoglobin.

**Unit-IV: Biological functions of Hormones:**

Introduction, Types of hormones, Role of Andosterone, Progesterone and thyroxin, action of cortisone, Insulin.

**Unit-V: Medicinal Chemistry:**

The role of vitamins – K, E, D, C, B – complex, classification of antibiotics, mechanism of antibiotics action - role of ampicillin, chloramphenicol and amoxicillin as antibiotics.

**Text books/ Reference books:**

1. Laboratory safety for Chemistry Students by Robert H. Hill and David Finster
2. A Text book of Environmental chemistry by W. Moore and F.A. Moore
3. Environmental Chemistry by Samir K. Banerji
4. Organic Chemistry by G. Mare Loudan, Purdue University
5. Unified Chemistry by O.P. Agarwal, Paper-III, JPNP Publications.
6. Hormones and Endocrine system – Kleiner, Rossemannith.
7. Principles of Biochemistry-Leninger.