

**ANDHRA PRADESH STATE COUNCIL OF HIGHER EDUCATION**

(A Statutory body of the Government of Andhra Pradesh)

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## REVISED SYLLABUS OF B.Sc (Chemistry)

**UNDER CBCS FRAMEWORK WITH EFFECT FROM 2020-2021**

**PROGRAMME: THREE-YEAR B.Sc. (B.Sc Chemistry)**

 **Chemistry**

***(With Learning Outcomes, Unit-wise Syllabus, References, Co-curricular Activities & Model Q.P.)***

***For Fifteen Courses of 1, 2, 3 & 4 Semesters)***

**(To be Implemented from 2020-21 Academic Year) Andhra Pradesh State Council of Higher Education**

# B.Sc. Chemistry Revised Syllabus under CBCS

**w.e.f. 2020-21**

# Structure of Chemistry Core Syllabus under CBCS

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| **YEAR** | **SEMESTER** | **COURSE** | **TITLE** | **MARKS** | **CREDITS** |
| **I** | I | I | Inorganic and Physical Chemistry | 100 | 03 |
| Practical – I Analysis of SALT MIXTURE | 50 | 02 |
| II | II | Organic and General Chemistry | 100 | 03 |
| Practical – II Volumetric Analysis | 50 | 02 |
| **II** | III | III | Organic Chemistry and Spectroscopy | 100 | 03 |
| Practical – III Organic preparations and IR Spectral Analysis | 50 | 02 |
| IV | IV | Inorganic, Organic and Physical Chemistry | 100 | 03 |
| Practical – IV Organic Qualitative analysis | 50 | 02 |
|  |  | V | ENVIRONMENTAL CHEMISTRY | 100 | 02 |
| Practical-V  | 50 | 02 |

 SEMESTER-VI

 ELECTIVE PAPER – VII-(B) : ENVIRONMENTAL CHEMISTRY

 45 hrs (3 h / w)

 UNIT-I Introduction 9h

 Concept of Environmental chemistry-Scope and importance of environment in now adays – Nomenclature of environmental chemistry – Segments of environment - Natural resources – Renewable Resources – Solar and biomass energy and Nonrenewable resources – Thermal power and atomic energy – Reactions of atmospheric oxygen and Hydological cycle

 UNIT-II Air Pollution 9h Definition – Sources of air pollution – Classification of air pollution – Acid rain – Photochemical smog – Green house effect – Formation and depletion of ozone – Bhopal gas disaster – Controlling methods of air pollution.

UNIT-III Water pollution 9h Unique physical and chemical properties of water – water quality and criteria for finding of water quality – Dissolved oxygen – BOD, COD, Suspended solids, total dissolved solids, alkalinity – Hardness of water – Methods to convert temporary hard water into soft water – Methods to convert permanent hard water into soft water – eutrophication and its effects – principal wastage treatment – Industrial waste water treatment.

UNIT-IV Chemical Toxicology 9h Toxic chemicals in the environment – effects of toxic chemicals – cyanide and its toxic effects – pesticides and its biochemical effects – toxicity of lead, mercury, arsenic and cadmium.

UNIT-V Ecosystem and biodiversity 9h

Ecosystem Concepts – structure – Functions and types of ecosystem – Abiotic and biotic components – Energy flow and Energy dynamics of ecosystem – Food chains – Food web – Tropic levels – Biogeochemical cycles (carbon, nitrogen and phosporus) Biodiversity Definition – level and types of biodiversity – concept - significance – magnitude and distribution of biodiversity – trends - biogeographical classification of india – biodiversity at national, global and regional level.

 List of Reference books

 1. Fundamentals of ecology by M.C.Dash

2. A Text book of Environmental chemistry by W. Moore and F.A. Moore

3. Environmental Chemistry by Samir k. Banerji

 LABORATORY COURSE – VI

 Practical Paper – Elective VII B (at the end of semester VI)

 30 hrs (2 h / W) 1.Determination of carbonate and bicarbonate in water samples (acidity and alkalinity)

 2. Determination of hardness of water using EDTA a) Permanent hardness b) Temporary hardness

 3. Determination of Acidity

 4. Determination of Alkalinity

5. Determination of chlorides in water samples