

Curriculum

(Odd Semester 2023-24)

Teacher Name: **Dr. Shiv Kumar**

Course: B.Sc. (H) Chemistry, GE, Sem-I

Paper Name: Bioinorganic Chemistry,

S.No.	Contents	Allocation of Lectures	Month wise schedule to be followed	Assignments/ Presentations etc
1	Introduction: A brief introduction to bio-inorganic chemistry. Metal ions present in biological systems and their classification on the basis of action (essential, non-essential, trace & toxic). Classification of metallobiomolecules (enzymes, transport and storage proteins and non-proteins). Brief idea about membrane transport, channels, pumps.	-	August –2 nd week of September – 16 th	Related Problems, Assignment, Class Test,
2	Role of s-block Elements in Biological System: Role of metal ions present in biological systems with special reference to Na ⁺ , K ⁺ and Mg ²⁺ and Ca ²⁺ ions: Na/K pump; Ca pump, role of Mg ²⁺ ions in energy production and chlorophyll. Role of calcium in bone formation.	-	September 23 rd to October–7 th	Related Problems, Assignment, Class Test,
3	Role of iron in oxygen transport and storage (haemoglobin and myoglobin), Perutz mechanism, Cooperative effect, Bohr effect, comparison of oxygen saturation curves of haemoglobin and myoglobin, carbon monoxide. Storage and transport of iron in humans (ferritin and transferrin)	-	October –14 st to October –28 th	Related Problems, Assignment, Class Test,
4	Toxicity of Heavy Metal Ions: Toxicity of heavy metal ions (Hg, Pb, Cd and As), reasons for toxicity and their antidotes	-	November –4 th week of November of Last week	Related Problems, Assignment, Class Test,