

CURRICULUM PLAN REPORT
(Odd SEMESTER 2021-22)
B.Sc. (H), III Year
Semester – V

Name of Paper & Code:- CHEMISTRY-DSE: NOVEL INORGANIC SOLIDS, (4 Periods per week)

Contents	Month wise schedule to be followed	Tutorials/Assignment/Presentation
Synthesis of inorganic solids: Conventional heat and beat methods, Co-precipitation method, Sol-gel methods, Hydrothermal method, Ion-exchange and Intercalation methods. Semiconductors, different types of semiconductors and their application	July 3 rd week-1 st week of August	-Syllabus Overview -Reference Books -Problem solving
Characterization techniques of inorganic solids: Powder-ray Defecation, UV-visible spectroscopy, Scanning Electron Microscopy (SEM), Transmission Electron Microscopy (TEM), Fourier Transform Infrared (FTIR) Spectroscopy, Brunauer-Emmett-Teller (BET) Surface area analyser, Dynamic Light Scattering (DLS)	2 nd Week of August-4 th week of August	-Related Problems -Home Register checking - Class test
Nanomaterials: Overview of nanostructures and nanomaterials: classification. Preparation of gold and silver metallic nanoparticles, Concept of surface plasmon resonance, self-assembled nanostructures-control of nanoarchitecture-one dimensional control. Carbon nanotubes and inorganic nanowires. Bioinorganic nanomaterials, DNA and nanomaterials.	1 st week of September- 4 th week of September	- Related Problems -Home Register checking - Class test - Previous Year Question Papers discussion
Inorganic solids of technological importance: Cationic, anionic, mixed Solid electrolytes and their applications, Inorganic pigments – coloured solids, white and black pigments. One-dimensional metals, molecular magnets, inorganic liquid crystals	1st week of October	-Related Problems - Assignment - Home Register Overview - Student's difficulties
Composite materials: Introduction, limitations of conventional engineering materials, role of matrix in composites, classification, matrix materials, reinforcements, metal-matrix composites, polymer-matrix composites, <u>fibre-reinforced composites</u> , environmental effects on composites, applications of composites	2 nd & 3 rd week of October	- Revision session prior to home - Student's difficulties -Previous Year Question Papers discussion
Speciality polymers: <u>Conducting polymers - Introduction, conduction mechanism, polyacetylene, polyparaphenylene and polypyrrole, applications of conducting polymers</u> , Ion-exchange resins and their applications. Ceramic & Refractory: Introduction, classification, properties, raw materials, manufacturing and applications.	4 th week of October-1 st week of November	- Related Problems - Home Register Overview - Revision session prior to home - Previous Year Question Papers discussion

Faculty
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