

Subject Name : Chemistry

Sr No	Unit	Topic Details
1	UNIT-I	Overview of role of chemistry in our dail life
2	UNIT-II	Water analysis – Hardness, Alkalinity
		Chloride, Sulphate and Dissolved Oxygen
		Ill effects of hard water in boilers
		Boiler feed water treatments- Zeolite and Ion exchange. Desalination techniques, reverse osmosis and electro-dialysis and numerical.
		Importance of potable water,Specifications for drinking water
		Phase rule - one component system- Water
		Applications and limitations of Phase rule.
3	UNIT-III	Types of corrosio- Dry corrosion- mechanism,
		Pilling-Bedworth rule,
		Wet corrosion - mechanism, factors influencing corrosion,
		Methods of corrosion control- Cathodic protection, and anodic
		protective coatings- metallic coatings and nonmetallic coatings
4	UNIT-IV	Classification of chemical fuels, calorific value
		Bomb Calorimeter
		Fuel Cells – Definition, Advantages and limitations, H2-O2 Fuel cell.
		Combustion: chemical reactions, calculations of air required,
		Liquid fuels - Petroleum - composition and refining. Petrol, Diesel and Jet fuels and their quality parameters.
		ultimate analysis
		Solid fuel - Coal - proximate
5	UNIT-V	Stimuli-Responsive Polymers, Biodegradable polymers
		Polymerization mechanism, thermoplastic and thermosetting polymers
		Tm and Tg,Techniques of polymerization
		Compounding of plastics. Specialty polymers- Conjugated Polymers
		Polymers in day-to-day life,Functionality of monomers
		Recycling of polymers.
6	UNIT-VI	Traditional and green pathways of synthesis of polyurethane and green hydrogenation methods.
		Green Chemistry - Definition, goals, twelve principles, need and industrial applications.
7	UNIT-VII	Instrumentation and applications.
		UV- Visible spectroscopy – Principle