

**DEPARTMENT OF CHEMISTRY
NATIONAL INSTITUTE OF TECHNOLOGY
KURUKSHETRA-136119**

Dated: 02.11.2020

MID-TERM EXAM-II (REAPPEARS, CHY-101T and CHIR-11)

SYLLABUS FOR CHY-101T

Phase Rule: Description of various terms (phase, component and degrees of freedom). One component system (water and sulphur systems), freeze drying. Two components system with simple eutectic formation (Pb-Ag and KI-H₂O systems), solders, safety plugs and freezing mixtures.

Organic Chemistry: Reaction intermediates (carbocations, carbanions, carbenes and free radicals), aromaticity and Huckel treatment of organic compounds, reaction mechanisms: SN1, SN2, E1 and E2 reactions, aromatic nucleophilic substitution and aromatic electrophilic substitution reactions.

SYLLABUS FOR CHIR-11

Natural Resources

Renewable and non-renewable resources: Natural resources and associated problems. **Forest resources-** Use and over-exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forest and tribal people. **Water resources-** Use and over-utilization of surface and ground water, floods, drought, conflicts over water. **Mineral resources-** Use and exploitation, environmental effects of extracting and using mineral resources, case studies. **Food resources-** World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies. **Energy resources-** Present energy resources in India and its sustainability, energy demand scenario in India, growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources; **Power plants:** Different types of conventional power plants, advantages & disadvantages of conventional power plants, conventional vs non-conventional power generation; **Solar energy:** Basics of solar energy, solar thermal energy, photovoltaic (PV) solar cells, advantages & disadvantages, environmental impacts and safety; **Wind energy:** Energy from wind turbines, India's wind energy potential, types of wind turbines, off shore wind energy, environmental benefits and impacts.

Chetti Prabhakar
Course coordinator (CHY-101T and CHIR-11)

Minati Baral
HOD

Date of examination: 07.11.2020, time 5.00 PM to 5.50 PM (CHY-101T and CHIR11)

Note: The students having reappear in CHY-101T and CHIR-11 may contact on the email id chetti@nitkkr.ac.in