

**Syllabus for Ph.D. Entrance Examination
Chemistry, IIT (BHU)**

Date: 21.11.2017

Inorganic Chemistry

Chemical periodicity, Structure and bonding, Concepts of acids and bases, Chemistry of Main group elements, Transition elements and Inner transition elements, Coordination chemistry, Organometallic chemistry, Cages and metal clusters, Bioinorganic chemistry, Nuclear chemistry, Electro- and thermoanalytical methods in analytical chemistry, Spectroscopic characterisation of inorganic compounds

Physical Chemistry:

Basic principles of quantum mechanics, Chemical bonding in diatomics, Chemical applications of group theory, Molecular spectroscopy, Chemical thermodynamics, Statistical thermodynamics, Electrochemistry, Chemical kinetics, Colloids and surfaces, Solid state, Polymer chemistry

Organic Chemistry

Principles of stereochemistry, Aromaticity, Organic reactive intermediates, Organic reaction mechanisms (addition, elimination, substitution reactions, common named reactions and rearrangements), Organic transformations and reagents, Concepts in organic synthesis, Pericyclic reactions, Synthesis and reactivity of common heterocyclic compounds containing one or two heteroatoms (O, N, S), Structure determination of organic compounds by spectroscopic techniques.



Radi
21.11.17.

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