**Lesson Plan**

Name of the Teacher - Joginder Singh

Class - M.Sc.Chemistry final

Name of Subject with Code- CHP (H)-302 Physical Special-II

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| **Week1,** | | |
| 01-08-18 | **Solid State Chemistry-1**  **INTRODUCTION** | |
| 02-08-18 | , Nucleation ,Free energy of nucleation | |
| 03-08-18 | Kinetic expressions for diffusion controlled | |
| 04-08-18 | phase boundary controlled and nucleation and growth controlled | |
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| **Week 2,** |  | |
| 06-08-18 | | |
| 07-08-18 | Thermal decomposition reactions | |
| 08-08-18 | ,: Laws, Classification, | |
| 09-08-18 | Functions and growth of nuclei | |
| 10-08-18 | Reactions. Perfect and imperfect crystals | |
| 11-08-18 | Intrinsic and extrinsic defects, | |
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| **Week 3,** | | |
| 13-08-18 | , Point defects, Line and plane defects, | |
| 14-08-18 | Vacancies: Schottky and Frenkel defects | |
| 16-08-18 | Thermodynamics of ScottKy and, | |
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| **Week 4,** |  | |
| 20-08-18 | | |
| 21-08-18 | Frenkel defect formation | |
| 22-08-18 | Colour centres | |
| 23-08-18 | , non-stoichiometry defects. | |
| 24-08-18 |  | |
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| **Week 5,** |  | |
| 27-08-18 | **Solid State Chemistry-II**  Classification of solids,. | |
| 28-08-18 | , Lattice energy | |
| 29-08-18 | Evaluation of Madelung constant (NaCl), | |
| 30-08-18 | Calculation of repulsive | |
| 31-08-18 | potential exponent:Lattice heat capacity | |
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| **Week 6,** |  | |
| 01-09-18 | Einstein and Debye model of lattice heat capacity, Debye T3 law. | |
| **Week 7,** |  | |
| 04-09-18 | **Electronic Properties and Band Theory**  Metals, Super conductors. | |
| 05-09-18 | , insulators and semiconductors | |
| 06-09-18 | , Electronic structure of solids | |
| 07-09-18 Band theory, Band structure of metals | | |
| 08-09-18 | insulators and semiconductors | |
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| **Week8,** |  | |
| 10-09-18 | Intrinsic and extrinsic semiconductors | |
| 11-09-18 | :,., Doping semiconductors, *p-n* junctions | |
| 12-09-18 | Optical Properties: Optical reflectance | |
| 13-09-18 | , Photoconduction | |
| 14-09-18 | , Photoelectric effects. Magnetic Properties, Classification of material | |
| **Week 9,** | | |
| 17-09-18 | , Quantum theory of paramagnetics-cooperative phenomena | |
| 18-09-18 | Magnetic domains, Hysteresis. | |
| 19-09-18 | Organic Solids: Electrically conducting solids | |
| 20-09-18 | , Charge transfer complex organic metals | |
| 21-09-18 | New superconductors. | |
| 22-09-18 | CALSS TEST OF UNIT 1 | |
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| **Week 10,** | | |
| 24-09-18 | **Diffraction Methods:**  Lattice, Unit cell. | |
| 26-09-18 | Bragg’s Law, | |
| 27-09-18 | , Reciprocal lattice | |
| 28-09-18 | Structure determination by X-ray diffraction | |
| 29-09-18 | , Powder method in detail, | |
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| **Week 11,** | | |
| 1-10-18 | Structure of NaCl and KCl. | |
| 3-10-18 | Single crystal: Wiesenberger method | |
| 4-10-18 | , Heavy atom method, | |
| 5-10-18 | Fourier synthesis factor. | |
| 6-10-18 | , Brief method of intensity data collection | |
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| **Week 12,** | | |
| 8-10-18 | , Brief method of intensity data collection | |
| 9-10-18 | , Neutron and electron diffraction methods | |
| 10-10-18 | , Neutron and electron diffraction methods | |
| 11-10-18 | , Comparison of XRD | |
| 12-10-18 | , Comparison of XRD | |
| 13-10-18 | CLASS TEST | |
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| **Week 13,** | | |
| 15-10-18 | SESSIONAL EXAM | |
| 15-10-18 | SESSIONAL EXAM | |
| 16-10-18 | SESSIONAL EXAM | |
| 17-10-18 | SESSIONAL EXAM | |
| 18-10-18 | SESSIONAL EXAM | |
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| **Week 14,** |  | |
| 22-10-18 remedial classes | | |
| 23-10-18 | remedial classes | |
| 25-10-18 | remedial classes | |
| 26-10-18 | remedial classes | |
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| **Week 15,** |  | |
| 29-10-18 | remedial classes | |
| 30-10-18 remedial classes | | |  |
| 31-10-18 | remedial classes | |
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| **Week 16,** |  | |
| 02-11-18 | REVISION OF UNIT 1 | |
| 03-11-18 | REVISION OF UNIT 1 | |
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| **Week 17** | | |
| 05-11-18 | REVISION OF UNIT 1 | |
| 10-11-18 | REVISION OF UNIT 1 | |
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| **Week 18** | REVISION OF UNIT 1 | |
| 05-11-18 | REVISION OF UNIT 1 | |
| 10-11-18 | REVISION OF UNIT 1 | |
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| **Week 19** | REVISION OF UNIT 2 | |
| 12-11-18 | REVISION OF UNIT 2 | |
| 13-11-18 | REVISION OF UNIT 2 | |
| 14-11-18 | REVISION OF UNIT 2 | |
| 15-11-18 | REVISION OF UNIT 2 | |
| 16-11-18 | REVISION OF UNIT 2 | |
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| **Week 20** |  | |
| 19-11-18 | REVISION OF UNIT 3 | |
| 20-11-18 | REVISION OF UNIT 3 | |
| 21-11-18 | REVISION OF UNIT 4 | |
| 22-11-18 | REVISION OF UNIT 4 | |
| 24-11-18 | REVISION OF UNIT 4 | |
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| **Week 21** |  | |
| 26-11-18 | REVISION OF UNIT 3 | |
| 27-11-18 | REMEDIAL CLASSES | |
| 28-11-18 | REMEDIAL CLASSES | |
| 29-11-18 | REMEDIAL CLASSES | |
| 30-11-18 | REMEDIAL CLASSES | |

**Lesson Plan**

Name of the Teacher - Joginder Singh

Class - M.Sc.Chemistry final **M. Sc. (3rd Sem.)**

**Paper XXVII**

**Physical Special-III**

Name of Subject with Code- **CHP (H)-303**

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| **Week1,** | | |
| 01-08-18 | **Polymer Chemistry**  Classification of Ionic, concept. Number, weight and viscosity average molecular weights. | |
| 02-08-18 | , Polymerization: | |
| 03-08-18 | polymersCondensation, Addition, Radical chain, | |
| 04-08-18 | Polymerization conditions and polymer reactions.Polymerization in homogeneous and | |
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| **Week 2,** | Polymerization conditions and polymer reactions.Polymerization in homogeneous and | |
| 06-08-18 | | |
| 07-08-18 | Polymerization conditions and polymer reactions.Polymerization in homogeneous and | |
| 08-08-18 | Polymerization conditions and polymer reactions.Polymerization in homogeneous and | |
| 09-08-18 | Co-ordination and Co-polymerization. heterogeneous systems.Kinetics of polymerization.Polydispersion-average molecular weight | |
| 10-08-18 | Co-ordination and Co-polymerization. heterogeneous systems.Kinetics of polymerization.Polydispersion-average molecular weight | |
| 11-08-18 | Co-ordination and Co-polymerization. heterogeneous systems.Kinetics of polymerization.Polydispersion-average molecular weight | |
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| **Week 3,** | | |
| 13-08-18 | Co-ordination and Co-polymerization. heterogeneous systems.Kinetics of polymerization.Polydispersion-average molecular weight | |
| 14-08-18 | Co-ordination and Co-polymerization. heterogeneous systems.Kinetics of polymerization.Polydispersion-average molecular weight | |
| 16-08-18 | Co-ordination and Co-polymerization. heterogeneous systems.Kinetics of polymerization.Polydispersion-average molecular weight | |
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| **Week 4,** | Co-ordination and Co-polymerization. heterogeneous systems.Kinetics of polymerization.Polydispersion-average molecular weight | |
| 20-08-18 | | |
| 21-08-18 | Co-ordination and Co-polymerization. heterogeneous systems.Kinetics of polymerization.Polydispersion-average molecular weight | |
| 22-08-18 | Polydispersity and molecular weight distribution. | |
| 23-08-18 | Polydispersity and molecular weight distribution. | |
| 24-08-18 | Polydispersity and molecular weight distribution. | |
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| **Week 5,** |  | |
| 27-08-18 | Polydispersity and molecular weight distribution. | |
| 28-08-18 | Polydispersity and molecular weight distribution. | |
| 29-08-18 | Polydispersity and molecular weight distribution. | |
| 30-08-18 | Polydispersity and molecular weight distribution. | |
| 31-08-18 | Polydispersity and molecular weight distribution. | |
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| **Week 6,** |  | |
| 01-09-18 | **Polymer Characterization** | |
| **Week 7,** |  | |
| 04-09-18 | Measurement of molecular weights: End-group, Osmotic and Ultracentrifugation methods. Analysis and testing of polymers:Chemical analysis of polymers, Spectroscopic methods | |
| 05-09-18 | Measurement of molecular weights: End-group, Osmotic and Ultracentrifugation methods. Analysis and testing of polymers:Chemical analysis of polymers, Spectroscopic methods | |
| 06-09-18 | Measurement of molecular weights: End-group, Osmotic and Ultracentrifugation methods. Analysis and testing of polymer | |
| 07-09-18 Measurement of molecular weights: End-group, | | |
| 08-09-18 | Osmotic and Ultracentrifugation methods. Analysis and testing of polymers:Chemical analysis of polymers, Spectroscopic methods | |
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| **Week8,** |  | |
| 10-09-18 | The practical significance of molecular weight. andMicroscopy. Thermal analysis | |
| 11-09-18 | The practical significance of molecular weight. andMicroscopy. Thermal analysis | |
| 12-09-18 | The practical significance of molecular weight. andMicroscopy. Thermal analysis | |
| 13-09-18 | The practical significance of molecular weight. andMicroscopy. Thermal analysis | |
| 14-09-18 | The practical significance of molecular weight. andMicroscopy. Thermal analysis | |
| **Week 9,** | | |
| 17-09-18 | and physical testing: Tensile strength, Fatigue, Impact, Tear resistance and Hardness &Abrasion resistance | |
| 18-09-18 | and physical testing: Tensile strength, Fatigue, Impact, Tear resistance and Hardness &Abrasion resistance | |
| 19-09-18 | and physical testing: Tensile strength, Fatigue | |
| 20-09-18 | and physical testing | |
| 21-09-18 | Fatigue, Impact, Tear resistance and Hardness &Abrasion resistance | |
| 22-09-18 | a Fatigue, Impact, Tear resistance and Hardness &Abrasion resistance | |
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| **Week 10,** | | |
| 24-09-18 | **Solid State Chemistry**  Solid state reaction:, , Kinetics of solid state reactions | |
| 26-09-18 | General principles, Experimentalprocedures | |
| 27-09-18 | General principles, Experimentalprocedures | |
| 28-09-18 | Co-precipitation as a precursor to solid state reactions | |
| 29-09-18 | Co-precipitation as a precursor to solid state reactions | |
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| **Week 11,** | | |
| 1-10-18 | . Introduction to electron diffraction and neutron diffraction. ESCA, Chemical information from ESCA. | |
| 3-10-18 | Basics principles of photoelectron spectroscopy, Photoelectron spectroscopy of simple molecules, | |
| 4-10-18 | Basics principles of photoelectron spectroscopy, Photoelectron spectroscopy of simple molecules, | |
| 5-10-18 | Basics principles of photoelectron spectroscopy, Photoelectron spectroscopy of simple molecules, | |
| 6-10-18 | Basics principles of photoelectron spectroscopy, Photoelectron spectroscopy of simple molecules, | |
|  |  | |
| **Week 12,** | | |
| 8-10-18 | . Introduction to electron diffraction and neutron diffraction. | |
| 9-10-18 | ESCA, Chemical information from ESCA. | |
| 10-10-18 | ESCA, Chemical information from ESCA. | |
| 11-10-18 | ESCA, Chemical information from ESCA. | |
| 12-10-18 | Chemical information from ESCA. | |
| 13-10-18 | CLASS TEST | |
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| **Week 13,** | | |
| 15-10-18 | SESSIONAL EXAM | |
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| 16-10-18 | SESSIONAL EXAM | |
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| **Week 14,** |  | |
| 22-10-18 | | |
| 23-10-18 | REVISION OF UNIT 1 | |
| 25-10-18 | REVISION OF UNIT 1 | |
| 26-10-18 | REVISION OF UNIT 1 | |
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| **Week 15,** | REVISION OF UNIT 1 | |
| 29-10-18 | REVISION OF UNIT 1 | |
| 30-10-18 | | |  |
| 31-10-18 | REVISION OF UNIT 1 | |
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| **Week 16,** |  | |
| 02-11-18 | REVISION OF UNIT 1 | |
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| 28-11-18 | REMEDIAL CLASSES | |
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| 30-11-18 | REMEDIAL CLASSES | |