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| **Week 1** |  |  | **Paper II [ PHYSICAL CHEMISTRY]** |
| **Assignments** |  |  | **Section A:- Spectroscopy-III:- Electronic Spectrum** |
| **Week 1** | **1/1/2018** | **Day 1, 1.1** | Introduction |
| **Week 1** | **2/1/2018** | **Day 2, 1.2** | Concept of potential energy curves for bonding molecular orbitals. |
| **Week 1** | **3/1/2018** | **Day 3, 1.3** | Concept of potential energy curves for antibonding molecular orbitals. |
| **Week 1** | **4/1/2018** | **Day 4, 1.4** | Qualitative description of selection rules. |
| **Week 1** | **5/1/2018** | **Day 5, 1.5** | Franck- Condon Principle. |
| **Week 1** | **6/1/2018** | **Day 6, 1.6** | Qualitative description of sigma and pie molecular orbital (MO) their energy level. |

**DPG DEGREE COLLEGE, GURUGRAM**

**LESSON PLAN FOR VIth SEMESTER (2018)**

**FACULTY: Dr. SURBHI CHOUDHARY Subject: CHEMISTRY**

**Paper code:- PHYSICAL CHEMISTRY (CH-602)**

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| **Week 3** |  |  | **Section-B** |
| **Assignments** |  |  | **Photochemistry** |
| **Week 3** | **15/1/2018** | **Day 1, 2.1** | Introduction |
| **Week 3** | **16/1/2018** | **Day 2, 2.2** | Interaction of radiation with matter |
| **Week 3** | **17/1/2018** | **Day 3, 2.3** | Differences between thermal and photochemical processes. |
| **Week 3** | **18/1/2018** | **Day 4, 2.4** | Laws of photochemistry: Grotthus-Drapper law |
| **Week 3** | **19/1/2018** | **Day 5, 2.5** | Stark- Einstein law (law of Photochemical Equivalence) |
| **Week 3** | **20/1/2018** | **Day 6, 2.6** | Jablonski diagram depiciting various processes occurring in the excited state. |

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| **Week 2** |  |  |  |
| **Assignments** |  |  |  |
| **Week 2** | **8/1/2018** | **Day 1, 1.7** | Qualitative description of n molecular orbital (MO) their energy level. |
| **Week 2** | **9/1/2018** | **Day 2, 1.8** | Respective transitions of sigma and pie and n molecular orbital (MO). |
| **Week 2** | **10/1/2018** | **Day 3, 1.9** | Respective transitions of sigma and pie and n molecular orbital (MO)- Contd |
| **Week 2** | **11/1/2018** | **Day 4, 1.10** | Interactive lecture regarding queries of Unit I. |
| **Week 2** | **12/1/2018** | **Day 5, 1.11** | Interactive lecture regarding queries of Unit I. |
| **Week 2** | **13/1/2018** | **Day 6, 1.12** | Interactive lecture regarding queries of Unit I. |

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| **Week 4** |  |  |  |
| **Assignments** |  |  |  |
| **Week 4** | **22/1/2018** | **Day 1, 2.7** | Jablonski diagram depiciting various processes occurring in the excited state – Contd. |
| **Week 4** | **23/1/2018** | **Day 2, 2.8** | Qualitative description of fluorescence, phosphorescence, non-radiative processes. |
| **Week 4** | **24/1/2018** | **Day 3, 2.9** | Qualitative description of fluorescence, phosphorescence, non-radiative processes – Contd. |
| **Week 4** | **25/1/2018** | **Day 4, 2.10** | Internal Conversion |
| **Week 4** | **27/1/2018** | **Day 6, 2.11** | Intersystem Crossing |

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| **Week 5** |  |  |  |
| **Assignments** |  |  |  |
| **Week 5** | **29/1/2018** | **Day 1, 2.12** | Quantum Yield |
| **Week 5** | **30/1/2018** | **Day 2, 2.13** | Photosensitized Reactions-Energy transfer processes. |
| **Week 5** | **31/1/2018** | **Day 3, 2.14** | Photosensitized Reactions-energy transfer processes -Simple  Examples. |
| **Week 5** | **1/2/2018** | **Day 4, 2.15** | Interactive lecture regarding queries of Unit II. |
| **Week 5** | **2/2/2018** | **Day 5, 2.16** | Interactive lecture regarding queries of Unit II. |
| **Week 5** | **3/2/2018** | **Day 6, 2.17** | Interactive lecture regarding queries of Unit II. |

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| **Week 6** |  |  | **Section-C** |
| **Assignments** |  |  | **Solutions: Dilute Solutions and Colligative Properties** |
| **Week 6** | **5/2/2018** | **Day 1, 3.1** | Introduction |
| **Week 6** | **6/2/2018** | **Day 2, 3.2** | Ideal and Non-Ideal solutions. |
| **Week 6** | **7/2/2018** | **Day 3, 3.3** | Methods of expressing concentrations of solutions. |
| **Week 6** | **8/2/2018** | **Day 4, 3.4** | Activity and Activity Coefficient |
| **Week 6** | **9/2/2018** | **Day 5, 3.5** | Dilute solution |
| **Week 6** | **10/2/2018** | **Day 6, 3.6** | Colligative properties |

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| **Week 7** |  |  |  |
| **Assignments** |  |  |  |
| **Week 7** | **12/2/2018** | **Day 1, 3.7** | Raoult’s law |
| **Week 7** | **13/2/2018** | **Day 2, 3.8** | Relative lowering of Vapour Pressure |
| **Week 7** | **14/2/2018** | **Day 3, 3.9** | Molelcular Weight Determination. |
| **Week 7** | **15/2/2018** | **Day 4, 3.10** | Osmosis law of osmotic pressure and its measurement |
| **Week 7** | **16/2/2018** | **Day 5, 3.11** | Determination of Molecular Weight from Osmotic Pressure. |
| **Week 7** | **17/2/2018** | **Day 6, 3.12** | Elevation of Boiling Point. |

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| **Week 8** |  |  |  |
| **Assignments** |  |  |  |
| **Week 8** | **19/2/2018** | **Day 1, 3.13** | Depression of Freezing Point. |
| **Week 8** | **20/2/2018** | **Day 2, 3.14** | Thermodynamic derivation of relation between molecular weight and elevation in boiling point. |
| **Week 8** | **21/2/2018** | **Day 3, 3.15** | Thermodynamic derivation of relation between molecular weight and depression in freezing point. |
| **Week 8** | **22/2/2018** | **Day 4, 3.16** | Experimental methods for determining various Colligative properties. |
| **Week 8** | **23/2/2018** | **Day 5, 3.17** | Experimental methods for determining various Colligative properties – Contd. |
| **Week 8** | **24/2/2018** | **Day 6, 3.18** | Abnormal molar mass |

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| **Week 9** |  |  |  |
| **Assignments** |  |  |  |
| **Week 9** | **26/2/2018** | **Day 1, 3.19** | Degree of Dissociation. |
| **Week 9** | **27/2/2018** | **Day 2, 3.20** | Association of Solutes. |
| **Week 9** | **28/2/2018** | **Day 3, 3.21** | Interactive lecture regarding queries of Unit III. |
| **Week 9** | **1/3/2018** | **Day 4, 3.22** | Interactive lecture regarding queries of Unit III. |
| **Week 9** | **3/3/2018** | **Day 6, 3.23** | Interactive lecture regarding queries of Unit III. |

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| **Week 10** |  |  | **Section-D** |
| **Assignments** |  |  | **Phase Equillibrium** |
| **Week 10** | **5/3/2018** | **Day 1, 4.1** | Introduction |
| **Week 10** | **6/3/2018** | **Day 2, 4.2** | Statement and meaning of the terms – phase component |
| **Week 10** | **7/3/2018** | **Day 3, 4.3** | Degree of freedom |
| **Week 10** | **8/3/2018** | **Day 4, 4.4** | Thermodynamic derivation of Gibbs phase rule. |
| **Week 10** | **9/3/2018** | **Day 5, 4.5** | Phase Equilibria of one component system. |
| **Week 10** | **10/3/2018** | **Day 6, 4.6** | Phase Equilibria of Water and Sulphur systems. |

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| **Week 11** |  |  |  |
| **Assignments** |  |  |  |
| **Week 11** | **12/3/2018** | **Day 1, 4.5** | Phase Equilibria of two component systems Solid-Liquid Equilibria. |
| **Week 11** | **13/3/2018** | **Day 2, 4.6** | Phase Equilibria of two component systems Solid-Liquid Equilibria – Contd. |
| **Week 11** | **14/3/2018** | **Day 3, 4.7** | Simple Eutectic System |
| **Week 11** | **15/3/2018** | **Day 4, 4.8** | Pb-Ag System. |
| **Week 11** | **16/3/2018** | **Day 5, 4.9** | Pb-Ag System – Contd. |
| **Week 11** | **17/3/2018** | **Day 6, 4.10** | Desalination of lead. |

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| **Week 12** |  |  |  |
| **Assignments** |  |  |  |
| **Week 12** | **19/3/2018** | **Day 1, 4.11** | Interactive lecture regarding queries of Unit IV. |
| **Week 12** | **20/3/2018** | **Day 2, 4.12** | Interactive lecture regarding queries of Unit IV. |
| **Week 12** | **21/3/2018** | **Day 3, 4.13** | Interactive lecture regarding queries of Unit IV. |
| **Week 12** | **22/3/2018** | **Day 4, 4.14** | Interactive lecture regarding queries of Unit IV. |
| **Week 12** | **23/3/2018** | **Day 5, 4.15** | Interactive lecture regarding queries of Unit I, II, III, IV. |
| **Week 12** | **24/3/2018** | **Day 6, 4.16** | Interactive lecture regarding queries of Unit I, II, III, IV. |

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| **Week 13** |  |  |  |
| **Assignments** |  |  |  |
| **Week 13** | **26/3/2018** | **Day 1, 4.17** | Interactive lecture regarding queries of Unit I, II, III, IV. |
| **Week 13** | **27/3/2018** | **Day 2, 4.18** | Interactive lecture regarding queries of Unit I, II, III, IV. |
| **Week 13** | **28/3/2018** | **Day 3, 4.19** | Interactive lecture regarding queries of Unit I, II, III, IV. |
| **Week 13** | **29/3/2018** | **Day 4, 4.20** | Interactive lecture regarding queries of Unit I, II, III, IV. |
| **Week 13** | **30/3/2018** | **Day 5, 4.21** | Interactive lecture regarding queries of Unit I, II, III, IV. |
| **Week 13** | **31/3/2018** | **Day 6, 4.22** | Interactive lecture regarding queries of Unit I, II, III, IV. |

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| **Week 14** |  |  |  |
| **Assignments** |  |  |  |
| **Week 14** | **2/4/2018** | **Day 1, 4.23** | Revision from previous year Question Papers. |
| **Week 14** | **3/4/2018** | **Day 2, 4.24** | Revision from previous year Question Papers. |
| **Week 14** | **4/4/2018** | **Day 3, 4.25** | Revision from previous year Question Papers. |
| **Week 14** | **5/4/2018** | **Day 4, 4.26** | Revision from previous year Question Papers. |
| **Week 14** | **6/4/2018** | **Day 5, 4.27** | Revision from previous year Question Papers. |
| **Week 14** | **7/4/2018** | **Day 6, 4.28** | Revision from previous year Question Papers. |

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| **Week 15** |  |  |  |
| **Assignments** |  |  |  |
| **Week 15** | **9/4/2018** | **Day 1, 4.29** | Revision from previous year Question Papers. |
| **Week 15** | **10/4/2018** | **Day 2, 4.30** | Revision from previous year Question Papers. |
| **Week 15** | **11/4/2018** | **Day 3, 4.31** | Revision from previous year Question Papers. |
| **Week 15** | **12/4/2018** | **Day 4, 4.32** | Revision from previous year Question Papers. |
| **Week 15** | **13/4/2018** | **Day 5, 4.33** | Revision from previous year Question Papers. |
| **Week 15** | **14/4/2018** | **Day 6, 4.34** | Revision from previous year Question Papers. |

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| **Week 16** |  |  |  |
| **Assignments** |  |  |  |
| **Week 16** | **16/4/2018** | **Day 1, 4.35** | Revision from previous year Question Papers. |
| **Week 16** | **17/4/2018** | **Day 2, 4.36** | Revision from previous year Question Papers. |
| **Week 16** | **18/4/2018** | **Day 3, 4.37** | Revision from previous year Question Papers. |