

**LESSON PLAN FOR EVEN SEM**  
**SESSION 2017-18**

**NAME OF ASSISTANT PROFESSOR :MS. NANAK KAUR**  
**CLASS/SECTION : B.SC(II) SEC-A (TH.)**  
**B.SC(II)[PR.]**  
**SUBJECT :CHEMISTRY**

| UNIT/PART I            | TOPIC  |                      |
|------------------------|--|----------------------|
|                        | THEORY   | PRACTICAL            |
| DAY1<br>DATE 1-1-18    | Electronic structure, oxidation states   | Gravimetric analysis |
| DAY2<br>DATE 2-1-18    | Magnetic properties, complex formation, colour                                     | Gravimetric analysis |
| DAY3<br>DATE 3-1-18    | .....  | Gravimetric analysis |
| DAY4<br>DATE 5-1-18    | .....  | Gravimetric analysis |
| DAY5<br>DATE 6-1-18    | .....  | Gravimetric analysis |
| DAY6<br>DATE 8-1-18    | Electronic structure, oxidation states   | Gravimetric analysis |
| DAY7<br>DATE 9-1-18    | Ionic radii and lanthanide contraction occurrence, separation of lanthanides       | Gravimetric analysis |
| DAY8<br>DATE 10-1-18   | .....  | Gravimetric analysis |
| DAY9<br>DATE 12-1-18   | .....  | Gravimetric analysis |
| DAY10<br>DATE 13-1-18  | .....  | Gravimetric analysis |
| DAY11<br>DATE 15-1-18  | Ionic radii and lanthanide contraction   | Organic analysis     |
| DAY 12<br>DATE 16-1-18 | Occurrence, separation of lanthanides & Lanthanide compounds & uses of lanthanides | Organic analysis     |
| DAY13<br>DATE 17-1-18  | .....  | Organic analysis     |
| DAY14<br>DATE 19-1-18  | .....  | Organic analysis     |
| DAY15<br>DATE 20-1-18  | .....  | Organic analysis     |
| DAY16                  | <b>HOLIDAY</b>   | <b>HOLIDAY</b>       |

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| DATE 22-1-18           |  |                   |
| DAY17<br>DATE 23-1-18  | <b>SPORTS DAY</b>  | <b>SPORTS DAY</b> |
| DAY18<br>DATE 24-1-18  | <b>HOLIDAY</b>   | <b>HOLIDAY</b>    |
| DAY19<br>DATE 26-1-18  | <b>HOLIDAY</b>   | <b>HOLIDAY</b>    |
| DAY 20<br>DATE 27-1-18 | .....  | Organic analysis  |
| <b>UNIT/PART II</b>    | <b>TOPIC</b>   |                   |
|                        | <b>THEORY</b>  | <b>PRACTICAL</b>  |
| DAY1<br>DATE 29-1-18   | <b>Actinides</b> -General characteristics of actinides                         | Organic analysis  |
| DAY2<br>DATE 30-1-18   | Comparison of properties of Lanthanides with transition elements               | Organic analysis  |
| DAY3<br>DATE 31-1-18   | <b>HOLIDAY</b>   | <b>HOLIDAY</b>    |
| DAY4<br>DATE 2-2-18    | .....  | Organic analysis  |
| DAY5<br>DATE 3-2-18    | .....  | Organic analysis  |
| DAY6<br>DATE 5-2-18    | Comparison of properties of actinides with transition elements                 | Organic analysis  |
| DAY7<br>DATE 6-2-18    | Transition state theory of bimolecular reactions                               | Organic analysis  |
| DAY8<br>DATE 7-2-18    | .....  | Organic analysis  |
| DAY9<br>DATE 9-2-18    | <b>ASSIGNMENT 1</b>  | Organic analysis  |
| DAY10<br>DATE 10-2-18  | <b>HOLIDAY</b>   | <b>HOLIDAY</b>    |
| DAY11<br>DATE 12-2-18  | Comparison of properties of Lanthanides and actinides with transition elements | Organic analysis  |
| DAY12<br>DATE 13-2-18  | <b>HOLIDAY</b>   | <b>HOLIDAY</b>    |
| DAY13<br>DATE 14-2-18  | .....  | Organic analysis  |
| DAY14<br>DATE 16-2-18  | .....  | Organic analysis  |
| DAY15<br>DATE 17-2-18  | .....  | Organic analysis  |
| DAY16<br>DATE 19-2-18  | Transuranic elements   | Organic analysis  |
| DAY17<br>DATE 20-2-18  | Important questions discussion   | Organic analysis  |

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| DAY18<br>DATE 21-2-18  | .....  | Organic analysis |
| DAY19<br>DATE 23-2-18  | .....  | Organic analysis |
| <b>UNIT/PART III</b>   | <b>TOPIC</b>   |                  |
|                        | <b>THEORY</b>  | <b>PRACTICAL</b> |
| DAY1<br>DATE 24-2-18   | .....  | Organic analysis |
| DAY2<br>DATE 26-2-18   | Basic principles of inorganic qualitative analysis                       | Organic analysis |
| DAY3<br>DATE 27-2-18   | Basic principles of inorganic qualitative analysis                       | Organic analysis |
| DAY4<br>DATE 28-2-18   | <b>HOLIDAY</b>   | <b>HOLIDAY</b>   |
| DAY5<br>DATE 1-3-18    | <b>HOLIDAY</b>   | <b>HOLIDAY</b>   |
| DAY6<br>DATE 2-3-18    | <b>HOLIDAY</b>   | <b>HOLIDAY</b>   |
| DAY7<br>DATE 3-3-18    | <b>HOLIDAY</b>   | <b>HOLIDAY</b>   |
| DAY8<br>DATE 5-3-18    | Analysis of basic radicals(Gp-I,II)                                      | Organic analysis |
| DAY9<br>DATE 6-3-18    | Analysis of basic radicals(Gp-II-III)                                    | Organic analysis |
| DAY10<br>DATE 7-3-18   | .....  | Organic analysis |
| DAY11<br>DATE 9-3-18   | .....  | Organic analysis |
| DAY12<br>DATE 10-3-18  | <b>ASSIGNMENT 2</b>  | Organic analysis |
| DAY 13<br>DATE 12-3-18 | Analysis of basic radicals-<br>Interfering radicals and their<br>removal | Organic analysis |
| DAY14<br>DATE 13-3-18  | Analysis of basic radicals( Gp.-IV)                                      | Organic analysis |
| DAY15<br>DATE 14-3-18  | .....  | Organic analysis |
| DAY16<br>DATE 16-3-18  | .....  | Organic analysis |
| DAY17<br>DATE 17-3-18  | .....  | Organic analysis |
| DAY18<br>DATE 19-3-18  | Analysis of basic radicals(Gp.-V,VI)                                     | Organic analysis |
| DAY19<br>DATE 20-3-18  | Analysis of basic radicals(Gp-VI),<br>Analysis of acid radicals          | Organic analysis |

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| DAY20<br>DATE 21-3-18  | <b>CONDITIONAL TEST</b>  | Organic analysis |
| DAY21<br>DATE 22-3-18  | <b>CONDITIONAL TEST</b>  | .....            |
| DAY 22<br>DATE 23-3-18 | <b>HOLIDAY</b>   | <b>HOLIDAY</b>   |
| DAY 23<br>DATE 24-3-18 | .....  | Organic analysis |
| <b>UNIT/PART IV</b>    | <b>TOPIC</b>   |                  |
|                        | <b>THEORY</b>  | <b>PRACTICAL</b> |
| DAY1<br>DATE 26-3-18   | Analysis of acid radicals  | Organic analysis |
| DAY2<br>DATE 27-3-18   | Analysis of acid radicals  | Organic analysis |
| DAY3<br>DATE 28-3-18   | .....  | Organic analysis |
| DAY4<br>DATE 29-3-18   | <b>HOLIDAY</b>   | <b>HOLIDAY</b>   |
| DAY5<br>DATE 30-3-18   | .....  | Organic analysis |
| DAY6<br>DATE 31-3-18   | .....  | Organic analysis |
| DAY7<br>DATE 2-4-18    | Typical combination of acid radicals   | Organic analysis |
| DAY8<br>DATE 3-4-18    | Typical combination of acid radicals   | Organic analysis |
| DAY9<br>DATE 4-4-18    | .....  | Organic analysis |
| DAY10<br>DATE 6-4-18   | .....  | Organic analysis |
| DAY11<br>DATE 7-4-18   | .....  | Organic analysis |
| DAY12<br>DATE 9-4-18   | Typical combination of acid radicals<br>Gravimetric analysis- Theory of precipitation  | Organic analysis |
| DAY13<br>DATE 10-4-18  | Factors affecting solubility of precipitates<br>Co-precipitation, Post-precipitation, difference between co-precipitation and post-precipitation | Organic analysis |
| DAY14<br>DATE 11-4-18  | .....  | Organic analysis |
| DAY15<br>DATE 13-4-18  | .....  | Organic analysis |

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| DAY16<br>DATE 14-4-18 | <b>HOLIDAY</b>                          | <b>HOLIDAY</b>   |
| DAY17<br>DATE 16-4-18 | Treatment/ purification of precipitates | Organic analysis |
| DAY18<br>DATE 17-4-18 | Revision, discussion of last year paper | Organic analysis |
| DAY19<br>DATE 18-4-18 | <b>HOLIDAY</b>                          | <b>HOLIDAY</b>   |
| DAY20<br>DATE 20-4-18 | .....                                   | Organic analysis |
|                       |   |                  |

**LESSON PLAN FOR EVEN SEM**

**SESSION 2017-18**

**NAME OF ASSISTANT PROFESSOR :MS. NANK KAUR**

**CLASS/SECTION :B.SC(I) SEC-A**

**DAY-5,6 [TH.]**

**B.SC(I) SEC-C**

**DAY-3,4 [TH.]**

**B.SC(I) [PR.]**

**SUBJECT**

**: CHEMISTRY**

| UNIT/PART I           | TOPIC   |                            |
|-----------------------|---|----------------------------|
|                       | THEORY  | PRACTICAL                  |
| DAY1<br>DATE 3-1-18   | Introduction & Rate of reaction & its expression                                      | .....                      |
| DAY2<br>DATE 4-1-18   | Rate equation and its types   | Paper chromatography       |
| DAY3<br>DATE 5-1-18   | Introduction & Rate of reaction & its expression                                      | Paper chromatography       |
| DAY4<br>DATE 6-1-18   | Rate equation and its types   | Determination of Viscosity |
| DAY5<br>DATE 10-1-18  | Factors influencing the rate of a reaction – concentration, temperature, pressure     | .....                      |
| DAY6<br>DATE 11-1-18  | Factors influencing the rate of a reaction, solvent, light, catalyst                  | Determination of viscosity |
| DAY7<br>DATE 12-1-18  | Factors influencing the rate of a reaction – concentration, temperature, pressure     | Refractometry              |
| DAY8<br>DATE 13-1-18  | Factors influencing the rate of a reaction, solvent, light, catalyst                  | Refractometry              |
| DAY9<br>DATE 17-1-18  | Order of a reaction & Integrated rate expression for zero order, first order reaction | .....                      |
| DAY10<br>DATE 18-1-18 | Integrated rate expression for second and third order reaction                        | Refractometry              |
| DAY11<br>DATE 19-1-18 | Order of a reaction & integrated rate expression for zero order, first order          | Explanation on titrations  |

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|                        | reaction   |   |
| DAY12<br>DATE 20-1-18  | Integrated rate expression for second and third order reaction                                       | Explanation on titrations & solutions   |
| DAY13<br>DATE 22-1-18  | <b>HOLIDAY</b>   | <b>HOLIDAY</b>  |
| DAY14<br>DATE 23-1-18  | <b>SPORTS DAY</b>  | <b>SPORTS DAY</b>   |
| DAY15<br>DATE 24-1-18  | <b>HOLIDAY</b>   | <b>HOLIDAY</b>  |
| DAY16<br>DATE 25-1-18  | Half life period of a reaction & Effect of temperature on the rate of reaction – Arrhenius equation. | Refractometry   |
| DAY17<br>DATE 26-1-18  | <b>HOLIDAY</b>   | <b>HOLIDAY</b>  |
| DAY 18<br>DATE 27-1-18 | Half life period of a reaction & Effect of temperature on the rate of reaction – Arrhenius equation. | <b>Redox titrations:</b><br>Determination of Fe <sup>2+</sup> using KMnO <sub>4</sub> |
| <b>UNIT/PART II</b>    | <b>TOPIC</b>   |   |
|                        | <b>THEORY</b>  | <b>PRACTICAL</b>  |
| DAY1<br>DATE 31-1-18   | <b>HOLIDAY</b>   |   |
| DAY2<br>DATE 1-2-18    | Simple collision theory for unimolecular collision   | Explanation on titrations   |
| DAY3<br>DATE 2-2-18    | Simple collision theory for unimolecular collision   | <b>Redox titrations:</b><br>Determination of Fe <sup>2+</sup> using KMnO <sub>4</sub> |
| DAY4<br>DATE 3-2-18    | Transition state theory of bimolecular reactions   | Determination of Fe <sup>2+</sup> using K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub> |
| DAY5<br>DATE 7-2-18    | Transition state theory of bimolecular reactions   | .....   |
| DAY6<br>DATE 8-2-18    | <b>Electrochemistry</b> -Electrolytic conduction & factors affecting electrolytic conduction         | Explanation on titrations & solutions   |
| DAY7<br>DATE 9-2-18    | <b>ASSIGNMENT &amp;</b><br>Electrochemistry-Electrolytic conduction & factors affecting electrolytic | Determination of Fe <sup>2+</sup> using K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub> |
| DAY8<br>DATE 10-2-18   | <b>HOLIDAY</b>   | <b>HOLIDAY</b>  |
| DAY9<br>DATE 13-2-18   | <b>HOLIDAY</b>   | <b>HOLIDAY</b>  |
| DAY10<br>DATE 14-2-18  | Specific conductance, molar conductance, equivalent conductance and                                  |   |

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|                       | relationship  |  |
| DAY11<br>DATE 15-2-18 | Specific conductance, molar conductance, equivalent conductance variation with concentration            | Determination of $\text{Fe}^{2+}$ using $\text{KMnO}_4$  |
| DAY12<br>DATE 16-2-18 | Specific conductance, molar conductance, equivalent conductance and relationship                        | <b>Redox titrations:</b><br>Determination of $\text{C}_2\text{O}_4^{2-}$ using $\text{KMnO}_4$ |
| DAY13<br>DATE 17-2-18 | Specific conductance, molar conductance, equivalent conductance variation with concentration            | <b>Redox titrations:</b><br>Determination of $\text{C}_2\text{O}_4^{2-}$ using $\text{KMnO}_4$ |
| DAY14<br>DATE 21-2-18 | Arrhenius theory of ionization, Ostwald's Dilution Law  | .....  |
| DAY15<br>DATE 22-2-18 | Debye-Huckel – Onsager's equation for strong electrolytes   | Determination of $\text{Fe}^{2+}$ using $\text{KMnO}_4$  |
| DAY16<br>DATE 23-2-18 | Arrhenius theory of ionization, Ostwald's Dilution Law  | Determination of $\text{C}_2\text{O}_4^{2-}$ using using $\text{K}_2\text{Cr}_2\text{O}_7$     |
| <b>UNIT/PART III</b>  | <b>TOPIC</b>  |  |
|                       | <b>THEORY</b>   | <b>PRACTICAL</b>   |
| DAY1<br>DATE 24-2-18  | Debye-Huckel – Onsager's equation for strong electrolytes   | Determination of $\text{C}_2\text{O}_4^{2-}$ using using $\text{K}_2\text{Cr}_2\text{O}_7$     |
| DAY2<br>DATE 28-2-18  | <b>HOLIDAY</b>  | <b>HOLIDAY</b>   |
| DAY3<br>DATE 1-3-18   | <b>HOLIDAY</b>  | <b>HOLIDAY</b>   |
| DAY4<br>DATE 2-3-18   | <b>HOLIDAY</b>  | <b>HOLIDAY</b>   |
| DAY5<br>DATE 3-3-18   | <b>HOLIDAY</b>  | <b>HOLIDAY</b>   |
| DAY6<br>DATE 7-3-18   | Application of Kohlrausch's Law in calculation of conductance of weak electrolytes at infinite dilution | .....  |
| DAY7<br>DATE 8-3-18   | Applications of conductivity measurements: determination of degree of dissociation                      | Determination of $\text{Fe}^{2+}$ using $\text{K}_2\text{Cr}_2\text{O}_7$                      |
| DAY8<br>DATE 9-3-18   | Application of Kohlrausch's Law in calculation of conductance of weak electrolytes at infinite dilution | <b>Iodometric titrations:</b><br>Determination of $\text{Cu}^{2+}$ (using standard hypo)       |

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|                        |  | solution).  |
| DAY9<br>DATE 10-3-18   | <b>ASSIGNMENT 2</b> Applications of conductivity measurements: determination of degree of dissociation | <b>Iodometric titrations:</b><br>Determination of $\text{Cu}^{2+}$ (using standard hypo solution).                |
| DAY10<br>DATE 14-3-18  | Determination of $K_a$ of acids and numericals   | .....   |
| DAY11<br>DATE 15-3-18  | Determination of solubility product of sparingly soluble salts   | <b>Iodometric titrations:</b><br>Determination of $\text{Cu}^{2+}$ (using standard hypo solution).                |
| DAY12<br>DATE 16-3-18  | Determination of $K_a$ of acids and numericals   | <b>Iodometric titrations:</b><br>Determination of $\text{Cu}^{2+}$ (using standard hypo solution).                |
| DAY13<br>DATE 17-3-18  | Determination of solubility product of sparingly soluble salts   | <b>Explanation on Complexometric titrations:</b><br>Determination of $\text{Mg}^{2+}$ , $\text{Zn}^{2+}$ by EDTA. |
| DAY14<br>DATE 21-3-18  | <b>CONDITIONAL TEST</b>  | <b>Complexometric titrations:</b><br>Determination of $\text{Mg}^{2+}$ by EDTA                                    |
| DAY15<br>DATE 22-3-18  | <b>CONDITIONAL TEST</b>  | <b>Explanation on Complexometric titrations:</b><br>Determination of $\text{Mg}^{2+}$ , $\text{Zn}^{2+}$ by EDTA  |
| DAY 16<br>DATE 23-3-18 | <b>HOLIDAY</b>   | <b>Complexometric titrations:</b><br>Determination of $\text{Mg}^{2+}$ EDTA                                       |
| DAY 17<br>DATE 24-3-18 | Conductometric titrations  | <b>Complexometric titrations:</b><br>Determination of $\text{Mg}^{2+}$ EDTA                                       |
| <b>UNIT/PART IV</b>    | <b>TOPIC</b>   |   |
|                        | <b>THEORY</b>  | <b>PRACTICAL</b>  |
| DAY1<br>DATE 28-3-18   | Conductometric titrations  |   |
| DAY2                   | <b>HOLIDAY</b>   | <b>HOLIDAY</b>  |



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| DATE 29-3-18          |   |   |
| DAY3<br>DATE 30-3-18  | Concepts of pH and numericals   | <b>Complexometric titrations:</b><br>Determination of $Mg^{2+}$<br>EDTA                 |
| DAY4<br>DATE 31-3-18  | Concepts of pKa and numericals  | <b>Complexometric titrations:</b><br>Determination of $Zn^{2+}$<br>by EDTA              |
| DAY5<br>DATE 4-4-18   | Concepts of pH & Concepts of pKa and numericals                           | .....   |
| DAY6<br>DATE 5-4-18   | Buffer solution & Buffer action & Buffer mechanism of buffer action       | <b>Complexometric titrations:</b><br>Determination of $Mg^{2+}$<br>by EDTA              |
| DAY7<br>DATE 6-4-18   | Buffer solution & Buffer action   | <b>Complexometric titrations:</b><br>Determination of $Zn^{2+}$<br>by EDTA              |
| DAY8<br>DATE 7-4-18   | Buffer mechanism of buffer action<br>Henderson – Hazel equation for acids | <b>Complexometric titrations:</b><br>Determination of $Zn^{2+}$<br>by EDTA              |
| DAY9<br>DATE 11-4-18  | Henderson – Hazel equation for acids                                      | .....   |
| DAY10<br>DATE 12-4-18 | Henderson – Hazel equation for base                                       | <b>Complexometric titrations:</b><br>Determination of $Zn^{2+}$<br>by EDTA              |
| DAY11<br>DATE 13-4-18 | Henderson – Hazel equation for base                                       | <b>Complexometric titrations:</b><br>Determination of $Zn^{2+}$<br>by EDTA and revision |
| DAY12<br>DATE 14-4-18 | <b>HOLIDAY</b>  | <b>HOLIDAY</b>  |
| DAY13<br>DATE 18-4-18 | <b>HOLIDAY</b>  | <b>HOLIDAY</b>  |
| DAY14<br>DATE 19-4-18 | Numericals and problems and dicussion of last year questions              | <b>Complexometric titrations:</b><br>Determination of $Zn^{2+}$ by<br>EDTA              |
| DAY15<br>DATE 20-4-18 | Henderson – Hazel equation for acids                                      | Revision and viva questions<br>discussion   |
|                       |   |   |

