

DEPARTMENT OF CHEMISTRY
Individual Session Plan

Name of the Staff DR Mallikarjun Kote
Paper Title: DSC – CHEM – 1B

Designation: Assistance professor
Class: B.Sc. I Semester

Learning Outcomes:

- L1. Students get knowledge of basic analytical chemistry.
- L2. Students get Knowledge about the various applications of analytical chemistry.
- L3. Expose to Recent Issues and Challenges in volumetric analysis.

Teaching Learning Plan-2021-22

Unit	Topic	Lecture Hours	Teaching pedagogy	Resources
1	Language of Analytical Chemistry : Definition, determination, measurements, techniques and methods. Classification of analytical chemistry: choice of analytical methods, accuracy, precision, solubilities, selectivity's, methods validations. Titrimetric Analysis: Acid –base titration, complex metric titration, redox titration, precipitate titration.	14	Lecture Chalk & Talk	T ₁ T ₁ T ₁
2	Basic laboratory practice: calibration of glassware's, pipette, burette and volumetric flasks, sampling, solids and liquids, weightings, dryings, dissolving, Rules of work in analytical laboratory. General rules for performing quantitative determinations, volumetric and gravimetric analysis, safety in chemical laboratories, rules in fire prevention and accidents. First aid, precautions to be taken while handling toxic chemicals.	14	Lecture Chalk & Talk	T ₁ T ₂ T ₂ T ₂

Resources:

Text Books:

1. T₁ – Arun Bhal, B. S. Bhal and G. D. Tuli.
2. T₂ – Principles of Inorganic Chemistry by Puri, Sharma and Pathania.

Question Bank:

Short answer Questions:

1. Define accuracy.
2. Explain the precision.
3. Define error.
4. Classification errors.
5. Explain the standard deviation.

Long Answers Questions:

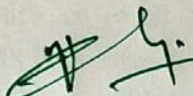
1. Write the difference between Accuracy and Precision.
2. Explain analytical methods for the preparation of the solutions.
3. What are the safety measurements of analytical lab?
4. Write a note on precipitation titration.

Topics for Seminar and Group discussion:

1. Accuracy and precision.
2. Errors.
3. Applications of analytical methods.

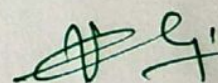


Staff Member



HOD

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Arts, Science & Commerce
BIDAR-585 403.



Principal

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Individual Session Plan-2021-22

Name of the Staff **DR Mallikarjun Kote**

Designation: **Assistance professor**

Paper Title: **DSC – CHEMISTRY**

Class: **B.Sc. III Semester**

Learning Outcomes:

- L1. Students understanding the basic concept of p-block elements.
L2. Students get Knowledge periodic table.
L3. Students write the electronic configuration of p-block elements.

Teaching Learning Plan

Unit	Topic	Lecture Hours	Teaching pedagogy	Resources
1	P-Block Elements : Introductions, p-block elements, electronic configuration of p-block elements. Boron family: physical and chemical properties of p-block elements, Diborane, preparation, properties, structure and uses of diborane, boron trifluoride, borazoles, preparation, properties, structure and uses of borazoles. Preparation, properties, structure and uses of triborazine.	08	Lecture Chalk & Talk	T ₁
2	Salutations: thermodynamics of ideal solutions, ideal solutions and Raoult's law, deviations from Raoult's law, non-ideal solutions, vapour pressure compositions and temperature-compositions, curve of ideal and non ideal solutions, distillations of solutions, Le Chatelier's rule, azeotropes.	08	Lecture Chalk & Talk	T ₂

Resources:

Text Books:

1. T₁ – A text book of Inorganic chemistry by Arun Bhal, B. S. Bhal and G. D. Tuli.
2. T₂ – Principles of Inorganic Chemistry by Puri, Sharma and Pathania.

Question Bank:

Short answer Questions:

1. Write the general electronic configuration of p-block elements. .
2. Define solution.
3. Define ideal solutions.
4. Classification boron family.
5. Explain the Raoult's law

Long Answers Questions:


1. Write the difference between Ideal and non-Ideal solutions.
2. Explain boron trifluoride.
3. What are the properties of borazole?
4. Write preparation properties of diborane

Topics for Seminar and Group discussion:


1. Solutions.
2. Boron .
3. Applications of boron family.



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Individual Session Plan-2021-22

Name of the Staff **DR Mallikarjun Kote**

Designation: **Assistance professor**

Paper Title: **Analytical Chemistry**

Class: **B.Sc. V Semester**

Learning Outcomes:

L1. Students understanding the basic concept of analytical chemistry.

L2. Students get Knowledge analytical methods.

L3. Students understanding the basic concept of analytical chemistry.

Teaching Learning Plan

Unit	Topic	Lecture Hours	Teaching pedagogy	Resources
1	Evaluation of Analytical data : Introductions, errors, accuracy, precision, classification of errors, systematic errors, determinate errors, indeterminate errors, random errors, absolute errors, relative errors, standard deviations, significant figures, methods of reporting analytical data.	08	Lecture Chalk & Talk	T ₁
2	Gravimetric Analysis: principle, complication of precipitations, co-precipitation, post-precipitations, determination, ageing process, washings, ignitions, cooling's, filters, types of filters, types of crucibles, gravimetric analysis of samples.	08	Lecture Chalk & Talk	T ₂

Resources:

Text Books:

1. T₁ – A text book of Analytical chemistry by Gurudeep and Chatwal
2. T₂ – Principles of Inorganic Chemistry by Puri, Sharma and Kalia.

Question Bank:

Short answer Questions:


1. Write the principle of gravimetric analysis.
2. Define solution.
3. Explain precipitations.
4. Define accuracy.
5. Explain the precision

Long Answers Questions:

1. Write a note on precipitation analysis.
2. Explain significant figure with examples.
3. What is the classification of errors?
4. Write preparation properties of gravimetric analysis

Topics for Seminar and Group discussion:

1. Errors.
2. Precipitations.
3. Gravimetric methods.



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