

VIVEKANANDA DEGREE COLLEGE
Rajajinagar, II Stage, Bangalore 560055

LESSON PLAN FOR THE ACADEMIC YEAR 2021-22

ANNEXURE-

1.2

Criterion 01

Metric -1.1.1

Programme: Chemistry

Course/Paper Name: DSC-1: Chemistry Paper-I

Semester: I SEM

Class: I B.Sc.

Total Hours: 56 Hours

| Sl. No. | Topic covered | No. of Lecture Hours | Methodology/pedagogy | Date | Initial |
|--|--|----------------------|----------------------|--------------------------------|---------|
| Name of the Faculty: Prof. Mohammed Rafi | | | | | |
| Unit 1: | | | | | |
| | Language of Analytical chemistry | 14 hours | Black board | 26/10/2021 to 25/01/2022 | MR |
| Total hours:14 hours | | | | | |
| Internal Assessment Test/Quiz/Assignment – 01 | | | | | |
| Name of the Faculty: Prof. L.Sripathy | | | | | |
| Unit 2 : | | | | | |
| 2 | Limitations of classical mechanics | 5 hours | Black board | 28/10/2021 to 11/12/2021 | LS |
| 3 | Quantum Mechanics | 9 hour | Black board | | |
| Total hours:14 hours | | | | | |
| Internal Assessment Test/Quiz/Assignment – 02 | | | | | |
| Name of the Faculty: Prof. L.Sripathy | | | | | |
| Unit 3: | | | | | |
| 5 | Periodic Table and Periodic properties | 14 hours | Black board | 16/12/2021 to 03/02/2022 | LS |
| Total hours:14 hours | | | | | |
| Internal Assessment Test/Quiz/Assignment – 03 | | | | | |
| Name of the Faculty: Prof. A.Kesava Reddy | | | | | |
| Unit 4: | | | | | |
| 7 | Basic concepts in organic chemistry | 14 hours | Black board | 29/10/2021 to 04/02/2022 | KR |
| Total hours :14 hours | | | | | |
| Internal Assessment Test/Quiz/Assignment – 04 | | | | | |

Signature of Faculty

Signature of HOD

Principal

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Criterion 01
Metric -1.1.1

Programe: B.Sc.

Course/Paper Name: Chemistry Paper-III

Semester: III SEM

Class: II B.Sc

Total Hours: 52 Hours

| Sl. No. | Topic covered | No. of Lecture Hours | Methodology/pedagogy | Date | Initial |
|--|-----------------------|----------------------|----------------------|--------------------------------|---------|
| Unit 1: | | | | | |
| Name of the Faculty: Prof.Mohammed Rafi | | | | | |
| 1 | Solutions | 6 hours | Black board | 21/10/2021 to 11/11/2021 | MR |
| Total hours :6 hours | | | | | |
| Unit 2 : | | | | | |
| Name of the Faculty: Prof.Mohammed Rafi | | | | | |
| 2 | Phase Equilibria | 6 hours | Black board | 12/11/2021 to 02/12/2021 | MR |
| Total hours :6 hours | | | | | |
| Unit 3 : | | | | | |
| Name of the Faculty:Prof.L.Sripathy | | | | | |
| 3 | Conductance | 7 hours | Black board | 13/11/2021 to 01/12/2021 | LS |
| 4 | Electrochemistry | 7 hours | Black board | 08/12/2021 to 19/01/2022 | LS |
| Total hours :14 hours | | | | | |
| Internal Assessment Test/Quiz/Assignment – 01 | | | | | |
| Unit 4: | | | | | |
| Name of the Faculty: Prof.A.Kesava Reddy | | | | | |
| 6 | Aldehydes and Ketones | 6 hours | Black board | 18/10/2021 to 06/12/2021 | KR |
| Total hours :6 hours | | | | | |
| Unit 5: | | | | | |
| Name of the Faculty: Prof.A.Kesava Reddy | | | | | |
| 7 | Carboxylic acids | 8 hours | Black board | 13/12/2021 to | KR |

31/01/2022

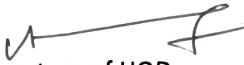
Total hours : 8 hours


Unit 6:

Name of the Faculty: Prof.Mohammed Rafi

| | | | | | |
|-----------------------|---------------|---------|-------------|--------------------------------|----|
| 8 | Amines | 7 hours | Black board | 03/12/2021 to 24/12/2021 | MR |
| 9 | Carbohydrates | 5 hours | Black board | 30/12/2021 to 13/01/2022 | MR |
| Total hours :12 hours | | | | | |


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Programme: B.Sc.

Course/Paper Name: Chemistry Paper-V (ORGANIC CHEMISTRY)

Semester: V SEM

Class: III B.Sc

Total Hours: 40 Hours

| Class: III B.Sc | | | Total Hours: 40 Hours | | |
|---|---|----------------------|--|--------------------------|---------|
| Sl. No. | Topic covered | No. of Lecture Hours | Methodology/pedagogy | Date | Initial |
| Unit 1: Stereochemistry | | | Name of the Faculty: Prof.A.Kesava Reddy | | |
| 1 | Elements of symmetry, isomerisms due free rotation, meso compounds, diastereomers, racemisation, resolution, geometric isomerism in alkenes and oximes. | 8 hours | Black board | 16/10/2021 to 11/12/2021 | KR |
| Total hours:8 hours | | | | | |
| Unit 2 : Amines | | | Name of the Faculty: Prof.Mohammed Rafi | | |
| 2 | Classification, preparation, propertiesand strengths. Heterocyclic compounds: classification, structure,preparation and properties. | 5 hours | Black board | 13/10/2021 to 13/11/2021 | MR |
| 3 | Heterocyclic compounds: classification, structure,preparation and properties. | 4 Hours | Black board | 08/11/2021 to 17/11/2021 | MR |
| Total hours:9 hours | | | | | |
| Unit 3: Natural products | | | Name of the Faculty: Prof.Mohammed Rafi | | |
| 4 | Carbohydrates:introduction, classification, monosaccharides, epimers and anomers, mutarotation | 4 hours | Black board | 24/11/2021 to 27/12/2021 | MR |
| 5 | Terpenes and terpenoids. Classification, structural elucidation of citral andzingiberene, structures of terpenes and their uses; | 6 hours | Black board | | |
| 6 | Alkaloids - classification, structures of fewalkaloids and uses, structural elucidation of nicotine. | 5 hours | Black board | | |
| Total hours:9 hours | | | | | |
| Unit 4: Spectroscopy Of Organic compounds | | | Name of the Faculty: Prof.A.Kesava Reddy | | |

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|-----------------------|---|---------|-------------|--------------------------|----|
| 7 | Introduction, UV – visible spectroscopy, IR spectroscopy and NMR spectroscopy. | 9 hours | Black board | 13/11/2021 to 09/12/2021 | KR |
| 8 | Industrial organic chemistry: introduction, classification, synthesis and uses of synthetic dyes. | 6 hours | Black board | 29/12/2021 to 12/01/2022 | MR |
| Total hours :15 hours | | | | | |

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Programme: B.Sc.

Course/Paper Name: Chemistry Paper-VI (Physical chemistry)

Class: III B.Sc

Total Hours: 40 Hours

| Sl. No. | Topic covered | No. of Lecture Hours | Methodology/pedagogy | Date | Initial |
|--|---|----------------------|----------------------|--------------------------|---------|
| Name of the Faculty: Prof.L.Sripathy | | | | | |
| Unit 1: Electrochemistry-I | | | | | |
| 1 | Molar conductance, conductometric titration, Transport number, Kohlrausch's law. Debye-Huckel-Onsager reactions; types of cells, Nernst equation and numerical problems and Arrhenius theory. | 10 hours | Black board | 12/10/2021 to 19/11/2021 | LS |
| Total hours: 10 hours | | | | | |
| Name of the Faculty: Prof.L.Sripathy | | | | | |
| Unit 2 : Electrochemistry-II | | | | | |
| 2 | Weston-Cadmium cell, Weston cell, liquid junction potentials, types of electrodes, determination of pH, solubility of salts and solubility products; potentiometric titrations with numerical examples. | 5 hours | Black board | 23/11/2021 to 07/12/2021 | LS |
| 3 | Ionic equilibria: Hydrolysis of salts, effect of temperature and dilution; common-ion effect; buffer action, application of buffers; indicators and numeric problems. | 3 Hours | Black board | 10/12/2021 to 17/12/2021 | LS |
| Total hours: 08 hours | | | | | |
| Internal Assessment Test/Quiz/Assignment – 01 | | | | | |
| Name of the Faculty: Prof.A.Kesava Reddy | | | | | |
| Unit 3: Physical Spectroscopy | | | | | |

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|--|---|---------|---|--------------------------|----|
| 4 | Dipole moment, induced dipole; structure of molecules; magnetic properties, electrical properties of solids, pyro electricity; Thomson effect, Seebeck effect and Peltier effect. | 5 hours | Black board | 21/12/2021 to 04/01/2022 | KR |
| 5 | Chemical spectroscopy 1: Radiation and matter; born-Oppenheimer approximations; rotational spectra of diatomic molecules; rotational energy of different quantum levels; selection rule and numericals. | 4 hours | Black board | 01/12/2021 to 01/01/2022 | KR |
| Total hours :9 hours | | | | | |
| Unit 4: Physical Spectroscopy -II | | | Name of the Faculty: Prof.A.Kesava Reddy | | |
| 6 | Vibrational spectroscopy. | 4 hours | Black board | 06/01/2022 to 15/01/2022 | KR |
| 7 | Raman spectroscopy, electronic spectroscopy. | 3 hours | Black board | 20/01/2022 to 27/01/2022 | KR |
| 8 | Electroanalytical methods. | 5 hours | Black board | 17/01/2022 to 07/02/2022 | MR |
| Total hours :12 hours | | | | | |


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|--|--|---------|---|--|--|
| 6 | nuclear capsid Hormones: Definition, classification; roles of insulin and glucagon; mediators of hormone action. | 2 hours | Black board/ Lecture PPT | | |
| Total hours:10 hours | | | | | |
| Internal Assessment Test/Quiz/Assignment – 01 | | | | | |
| Unit 3: Enzymes Name of the Faculty: | | | | | |
| 7 | Enzymes: active site, specificity, classification, enzyme substrate interaction, enzyme kinetics, Allosteric enzymes and enzyme inhibitors. | 4 hours | Black board/ Lecture PPT/Group Discussion/ Seminar/Case studies. | | |
| 8 | Biological oxidation : Bioenergetics; high energy phosphates, energy coupling in biological systems, redox potentials of important biological half reactions, calculation of energy yield from biological redox reaction, electron transport chain, oxidative and substrate level phosphorylation. | 4 hours | Black board/ Lecture PPT/Group Discussion/ Seminar/Case studies. | | |
| 9 | Biochemical techniques: Principle and applications of paper chromatography and TLC; cellulose acetate, electrophoresis and PAGE. | 2 hours | Seminar | | |
| Total hours:10 hours | | | | | |
| Unit 4: Metabolism Name of the Faculty: | | | | | |
| 10 | Catabolism and anabolism; carbohydrate metabolism – glycolysis, TCA cycle and energetics of cycle; gluconeogenesis; fatty acid | 6 hours | Black board/ Lecture PPT | | |

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|----------------------|---|---------|---------|--|--|
| | metabolism; protein metabolism – amino acid degradation; urea cycle. | | | | |
| 11 | Molecular biology: Central dogma, semi conservative replication; genetic code; transcription and translation; DNA finger printing | 4 hours | Seminar | | |
| Total hours:10 hours | | | | | |



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