Estd. June 1964

**"Education for Knowledge, Science and Culture."**
– Shikshanmaharshi Dr. Bapuji Salunkhe
**Shri. Swami Vivekanand Shikshan Sanstha's**
**VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)**
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# Department of Chemistry

## Course Outcomes (COs): Chemistry

| B. Sc. Part III Chemistry (Introduced in the year 2020-21) | |
|---|---|
| **Semester V** | |
| **Paper V: DSC-1002 E1** | |
| **Section I: Physical Chemistry** | |
| **CO No.** | **On completion of the course, student will be able to:** |
| CO1 | Understand the wave mechanics of atomic structure. |
| CO2 | Know the phenomenon related to the micro particle like electrons. |
| CO3 | Acquire the fundamentals behinds the spectroscopic techniques like Raman, electronics and vibrational spectroscopy. |
| CO4 | Adopt the basics of photochemistry, structure, defects in crystals and theory of the reaction rates. |
| **Section II: Inorganic Chemistry** | |
| CO1 | Describe the synthesis and applications of the semiconductors and superconductors in electrical and electronic devices. |
| CO2 | Impart essential knowledge regarding classification, types, mechanism and applications of catalyst in industrial fields. |
| CO3 | Improve the level of understanding of structure, method of preparation and applications of organometallic compounds in various fields. |
| CO4 | Gain thorough knowledge of role of various metals and nonmetals in our health. |
| **Paper VI: DSC-1002 E2** | |
| **Section I: Organic Chemistry** | |
| **CO No.** | **On completion of the course, student will be able to:** |
| CO1 | Learn mechanism of different organic name reactions and to |

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| | become confident to solve the problems based on the reactions. |
| CO2 | Adopt the utility of reagents in organic synthesis. |
| CO3 | Understand the fundamentals of terpenoids, alkaloids and applications of nucleophilic substitution reactions of aromatic compounds. |
| CO4 | Acquire the knowledge of pharmaceuticals and its use. |
| **Section II: Analytical Chemistry** | |
| CO1 | Discuss the basic concepts of qualitative and quantitative analysis. |
| CO2 | Develop the skills of potentiometric, titrimetric, gravimetric and colorimetric analysis. |
| CO3 | Illustrate the separation technique paper chromatography. |
| CO4 | Understand the basic of thin layer chromatography. |
| **Semester VI** | |
| **Paper VII: DSC-1002 F1** | |
| **Section I: Physical Chemistry** | |
| **CO No.** | **On completion of the course, student will be able to:** |
| CO1 | Understand the theoretical aspect of chemical transformation. |
| CO2 | Recognize about surface phenomenon and isotherms of surface reactions. |
| CO3 | Describe the methods of detections of radioactivity of the samples, the working principle of cells and batteries. |
| CO4 | Explain the chemistry behind the ethanol fermentation by anaerobic bacteria. |
| **Section II: Inorganic Chemistry** | |
| CO1 | Get idea about theories, factors and knowledge of prevention from corrosion. |
| CO2 | Gain the knowledge about ligands, chelates, classification and applications of chelating agents in analytical chemistry. |
| CO3 | Develop interest in various nuclear reactions and role of radio isotopes in medicinal, industrial and archaeology fields. |
| CO4 | Study the important aspects of the mechanism of the reactions involved in inorganic complexes of transition metals. Also acquire a basic understanding of nanochemistry, nanotechnology and its fascinating aspects. |
| **Paper VIII: DSC-1002 F2** | |
| **Section II: Organic Spectroscopic Techniques** | |

| CO No. | On completion of the course, student will be able to: |
|---|---|
| CO1 | Understand the basic concepts of spectroscopy. |
| CO2 | Acquire the knowledge of spectroscopic techniques such as NMR and Mass Spectroscopy. |
| CO3 | Interpret molecular structures by using spectroscopic techniques. |
| CO4 | Adopt the knowledge of various spectroscopic techniques such as UV and IR. |
| **Section II: Industrial Chemistry** | |
| CO1 | Understand the basics of industrial chemistry. |
| CO2 | Adopt the knowledge of sugar and jaggery industry. |
| CO3 | Learn and understand processes involved in manufacturing of alcohol and heavy chemicals. |
| CO4 | Illustrate the overall information regarding manufacture of fertilizers. |

VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous) ESTD JUNE 1964

Dr. (Mrs). S, D, Shirke
HEAD
DEPARTMENT OF CHEMISTRY
VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)