

A.T.V.V. Mandal's  
**B. D. Kale Mahavidyalaya, Ghodegaon**  
 DEPARTMENT OF CHEMISTRY  
**Course Outcomes**  
**S.Y.B.Sc. (Chemistry)**

| Sr.No. | Class                         | Course  | Course Outcome   |
|--------|-------------------------------|---|--|
|        | <b>S. Y.<br/>Semester III</b> | CH -301:<br>Physical and<br>Analytical<br>Chemistry | 1. Define / Explain concept of kinetics, terms used, rate laws, molecularity, order.<br>2. Discuss factors influencing adsorption, its characteristics, differentiates types as physisorption and Chemisorption, Classification of Adsorption Isotherms, to derive isotherms.  |
|        |                               | CH-302:<br>Inorganic and<br>Organic<br>Chemistry    | 1. Define terms related to molecular orbital theory (AO, MO, sigma bond, pi bond, bond order, magnetic property of molecules, etc).<br>2. Explain Werner's theory of coordination compounds. Differentiate between primary and secondary valency. Correlate coordination number and structure of complex ion.<br>3. Identify and draw the structures aromatic hydrocarbons from their names or from structure name can be assigned.                      |
|        |                               | CH-303: Practical<br>Chemistry-III                  | 1. Verify theoretical principles experimentally.<br>2. Interpret the experimental data on the basis of theoretical principles.<br>3. Correlate theory to experiments. Understand/verify theoretical principles by experiment observations; explain practical output / data with the help of theory.  |
|        | <b>S. Y.<br/>Semester IV</b>  | CH-401:Physical<br>and Analytical<br>Chemistry      | 1. Discuss meaning of phase, component and degree of freedom .<br>2. Discuss / explain thermodynamic aspects of Ideal solutions-Gibbs free energy change, Volume change, Enthalpy change and entropy change of mixing of Ideal solution.<br>3. Explain / discuss conductometric titrations .<br>4. Explain / define different terms in Colorimetry such as radiant power, transmittance, absorbance, molar, Lamberts Law, Beer's Law, molar absorptivity |

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|  |  | CH-402 :<br>Inorganic and<br>Organic<br>Chemistry | <p>1. Isomerism in coordination complexes 2. Explain different types of isomerism in coordination complexes.</p> <p>2. Apply principles of VBT to explain bonding in coordination compound of different geometries. 2. Correlate no of unpaired electrons and orbitals used for bonding. 2. Identify / explain / discuss inner and outer orbital complexes. 4. Explain / discuss limitation of VBT.</p> <p>3. Explain principle of CFT. 2. Apply crystal field theory to different type of complexes (Td, Oh, Sq, Pl complexes) 3. Explain: i) strong field and weak field ligand approach in Oh complexes ii) Magnetic properties of coordination compounds on the basis of weak and strong ligand field ligand concept. iii) Origin of colour of coordination complex. 4. Calculate field stabilization energy and magnetic moment for various complexes.</p> <p>4. Identify and draw the structures aldehydes and ketones from their names or from structure name can be assigned. 2. Explain / discuss synthesis of aldehydes and ketones. 3. Write / discuss the mechanism reactions aldehydes and ketones. 4. Explain /Discuss important reactions of aldehydes and ketones.</p> <p>5. Identify and draw the structures carboxylic acids and their derivatives from their names or from structure name can be assigned. 2. Explain / discuss synthesis of carboxylic acids</p> |
|  |  | CH-403: Practical<br>Chemistry-IV                 | <p>1. Understand systematic methods of identification of substance by chemical methods.</p> <p>2. Write balanced equation for all the chemical reactions performed in the laboratory.</p> <p>3. Perform organic and inorganic synthesis and able to follow the progress of the chemical reaction.</p>  |

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Principal  
B.D. Kale Mahavidyalaya  
Ghodegaon, Dist. Pune