FY-ACAD-31	Shri Ramdeobaba College of Engineering & Management, Nagpur -440013	Rev: 00
		Page: 01/04
Department: Chemistry	Course Code: CHT151 Course Name: Chemistry Teacher's Assessment 1	Date of Rev: 01/07/2016
Session: 2023-2024 Semester: First Semester	Branch: CSE, CSE-DS, CSE-AIML, CSE-Cyber Security	Weightage: 10 M Date of Issue: 28/09/2023 Last date of Submission: 09/10/2023

SET 2

Instructions to students:
a. All questions are mandatory.
b. Draw diagrams/sketches/chemical reactions wherever required for the illustration purpose.
c. Students need to submit the assignment in the small assignment copies to the faculty members clearly stating their own details such as name, branch, section, session, semester, roll number, date of submission, etc.
d. Partial/Incomplete/Photocopied copy shall not be accepted and marks shall be deducted accordingly

Part I: Characterization Techniques and computational tools
[CO Mapped: 03] [Weightage: 05 M]

Solve the following:

Q1: What are different shift could be observed in the electronic spectra of organic compounds. Explain such shifts with suitable examples.

Q2. Justify with examples:
(a) ^{1}H-NMR and ^{13}C-NMR are widely used for structural elucidation whereas ^{12}C, the most abundant form of organic carbon cannot used for the NMR technique.
(b) TMS is use as internal reference in NMR spectroscopy.
(c) Wavelength of maximum absorbance shift towards longer wavelength with increase in the conjugation in the structure.

Q3. What the different classes of drugs. Explain synthetic route with chemical reactions, uses and side effects of following drugs.
(a) Paracetamol
(b) Aspirin
(c) Ibuprofen

Q4. What is Molecular docking. What are the advantages and limitations of molecular docking of pharmaceutical active compounds. Enlist at-least 5-6 sources of the soft-wares used for molecular docking purpose.
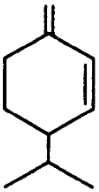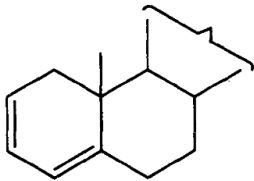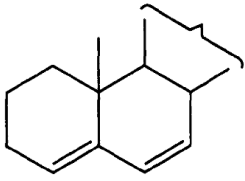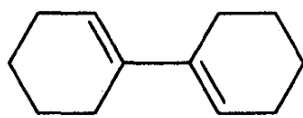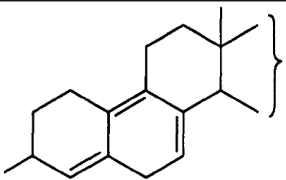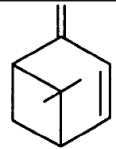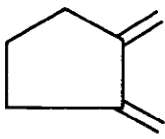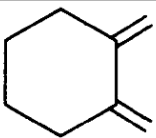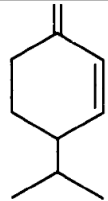
Q.5: (a)

Teachers Ass

Question. An αβ-unsaturated ketone of relative molecular mass 110 has an absorption band with λ_{max} at 215 nm and ϵ 10 000. A solution of this ketone showed absorbance $A = 2.0$ with a 1 cm cell. Calculate the concentration of the ketone in this solution, expressed in grams per liter, $g\ l^{-1}$.

(b)

One milligram of a compound of molecular weight 160 is dissolved in 10 mL of ethanol, and the solution is poured into a 1-cm UV cell. The UV spectrum is taken, and there is an absorption at λ_{max} = 247 nm. The maximum absorbance at 247 nm is 0.50. Calculate the value of ε for this absorption.

Q6. Calculate the wavelength of maximum absorbance for the following structures using Woodward-Fieser rule for conjugated dienes:

β-phellandrene

Answer the following questions with suitable examples, flow charts, diagrams wherever possible.

Q1: What is e-waste? What are major components present in the e-waste? Explain the environmental and health risks associated with e-wastes.

Q2: Explain the methodology for extraction of precious metals from e-wastes eg. Copper.

Q3: Enlist Twelve principles of Green Chemistry. Explain any four with suitable Industrial examples.

Q4: Explain the various recent advancements in the Green computing technologies used by the Multinational companies by citing their references in the notes. What are advantages of such technological advancements.

Q5: Write informative notes on:
(a) Green energy
(b) Green data servers and centers
(c) Green devices