

**BACHELOR OF SCIENCE (CBCS-2018 COURSE)**  
**T. Y. B. Sc. Sem-V : WINTER :- 2021**  
**SUBJECT: CHEMISTRY : ORGANIC CHEMISTRY-I**

Day : Monday  
Date 24-01-2022

W-18416-2021

Time : 02:00 PM-05:00 PM  
Max. Marks: 60

---

**N.B.:**

- 1) All questions are **COMPULSORY**.
  - 2) Figures to the right indicate **FULL** marks.
  - 3) Draw neat and labeled diagram **WHEREVER** necessary.
- 

**Q.1** Attempt **ANY TWO** of the following: [12]

- a) What is alkylation? Discuss the mechanism of Friedel-Craft alkylation of benzene. What are its limitations?
- b) Discuss the mechanism and stereochemistry of  $SN^1$  reaction.
- c) Write a note on : Ozonolysis.

**Q.2** Attempt **ANY TWO** of the following: [12]

- a) What is elimination? Discuss the mechanism of  $E_2$  reaction. Give factors affecting on it.
- b) Draw chair conformations of *cis* and *trans* 1, 3 – dimethyl cyclohexane. Comment on their stability and optical activity.
- c) Write a note on : Markownikoff's rule and peroxide effect.

**Q.3** Attempt **ANY TWO** of the following: [12]

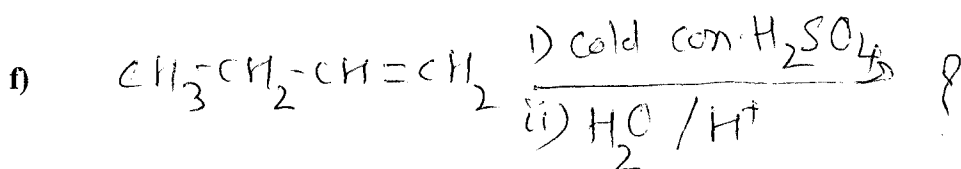
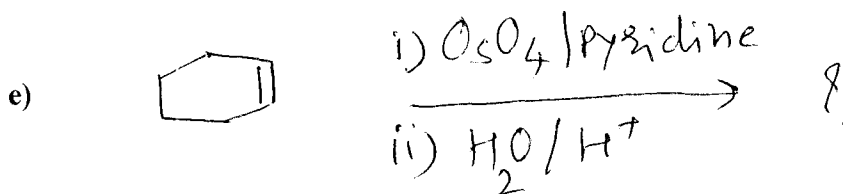
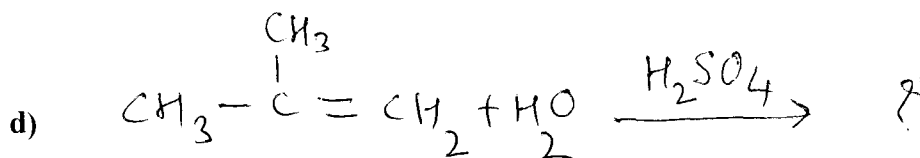
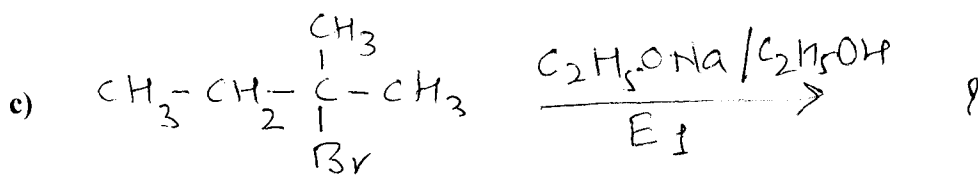
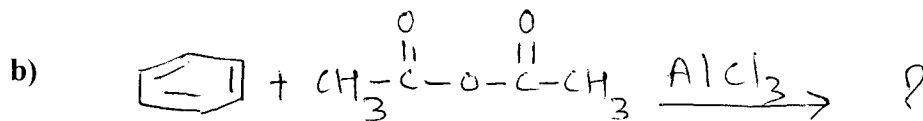
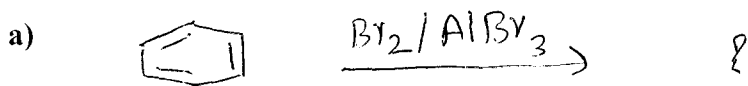
- a) What is nitration? Discuss the mechanism of nitration of benzene. Explain the role of conc.  $H_2SO_4$  in nitration.
- b) What is Hoffmann and Saytzeff elimination? Illustrate with suitable examples.
- c) Write a note on : Factors affecting on  $SN^1$  and  $SN^2$  mechanism.

**Q.4** Attempt **ANY THREE** of the following: [12]

- a) What is hydroxylation? Discuss it with alkaline  $KMnO_4$ .
- b) Explain the terms:
  - i) Bredt's rule
  - ii) Optical activity
- c) Explain activating and deactivating groups.
- d) Write a note on: Stereochemistry of  $SN^2$ .

**P.T.O.**

Q.5 Predict the product/s and suggest the mechanism for ANY FOUR of the following: [12]



\* \* \* \*