



(Pages : 4)

B – 4962

Reg. No. : ..... 10/2/17 .....

Name : .....

**First Semester M.Sc. Degree Examination, January 2017**  
**Branch : CHEMISTRY**  
**CH/CL/CA/CM 212 : Organic Chemistry – I**  
**(2016 Admission)**

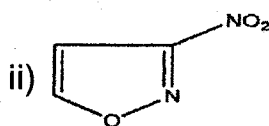
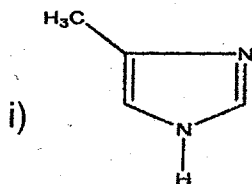
Time : 3 Hours

Max. Marks : 75

SECTION – A

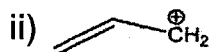
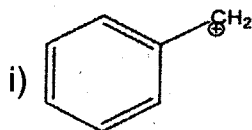
Answer **any two** among (a), (b) and (c) from **each** question. **Each** sub-question carries **2** marks.

- a) Draw the structure of 7-Chlorobicyclo [2.2.2] octane.  
b) Write the names of the following compounds :



- c) What is meant by stereoconvergence ?

- a) Draw all possible resonance structure for the following ions :



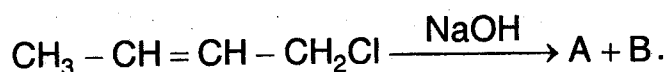
- b) Why triphenylmethyl radical is highly stable ?  
c) Account the following : 4-Nitrophenol is more acidic than 3-Nitrophenol.

P.T.O.



3. a) Solvolysis of t-BuBr in 60% ethanol at 55°C is  $10^4$  times faster than MeBr at the same conditions. Why?

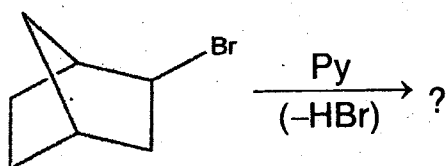
b) Predict A and B in the following reaction :



c) Give an example for aromatic  $\text{S}_{\text{N}}1$  mechanism.

4. a) Give an example for trans hydroxylation of cyclohexane.

b) Predict the product(s) for the following reaction :



c) What is meant by Felkin-Ann model?

5. a) What is the oxidation product of 2, 3-Dihydroxypropane by LTA?

b) How do you prepare DCC? Give a reaction involving DCC.

c) Give an example for hindered borane and its reaction.

**(2×10=20 Marks)**

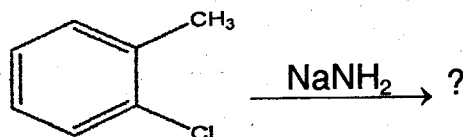
### SECTION - B

Answer either (a) or (b) from each question. Each sub-question carries 5 marks.

6. a) Explain cotton effect with suitable example.

b) What are prostereoisomerism and stereotopicity? Explain.

7. a) Complete and suggest suitable mechanism for the following reaction :



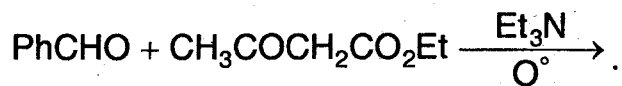
b) When cyclobutylamine treated with nitrous acid ( $\text{HNO}_2$ ) gives two products? What are the products? Explain.

8. a) Describe the mechanism of acid catalyzed ester hydrolysis.

b) Explain  $\text{S}_{\text{N}}\text{A}_{\text{r}}$  mechanism with suitable examples.



9. a) Predict the product(s) and suggest suitable mechanism the following reaction :

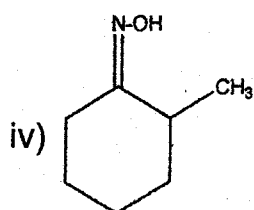
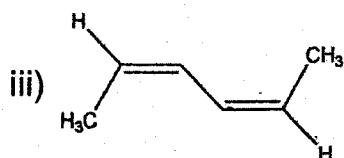
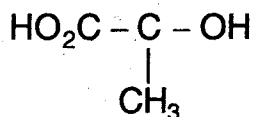
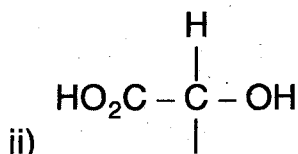
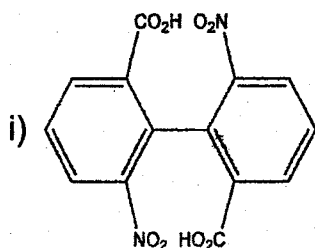


- b) Illustrate Reformatsky reaction with suitable examples.
10. a) Explain the reaction of 1-butene with ozone and give mechanism.
- b) Discuss Sommelet reaction with two examples. (5×5=25 Marks)

### SECTION - C

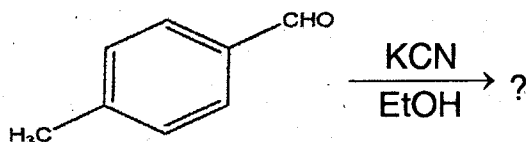
Answer any three questions. Each question carries 10 marks.

11. a) Illustrate circular dichroism and ORD with suitable example.
- b) Assign the following compounds R/S or E/Z configuration.

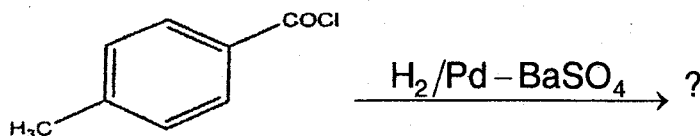




12. a) Discuss the formation, structure and reactions of nitrenes.  
b) Explain three reaction involving carbanions.
13. a) What are non-classical carbocations? Explain their formations and reactions.  
b) Discuss the mechanism of  $S_{RN}1$  and  $S_{Ni}$ .
14. a) Complete the propose suitable mechanism for the following reaction :



- b) Discuss Darzen reaction with suitable example.
15. a) Predict the product and explain the mechanism of the following :



- b) Explain allylic oxidation with two examples.

(10×3=30 Marks)

---