



Date: 28-04-2016

Dept. No.

Max. : 100 Marks

Time: 09:00-12:00

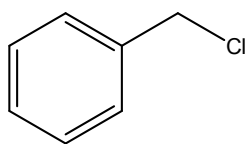
SECTION-A

Answer ALL questions

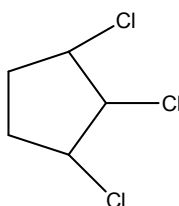
(10×2 =20 marks)

- How will you prepare chlorobenzene from benzenediazonium chloride?
- Write the IUPAC name of the following compounds:

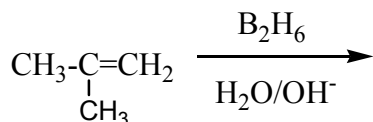
a)



b)



- Predict the product:



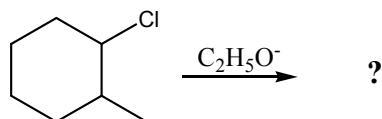
- p-Nitro phenol is more soluble in water than o-Nitro phenol –Explain.
- Why ethers should never be heated to dryness?
- What is the product formed when ethylene oxide is treated with methyl magnesium iodide?
- Draw the structure of following compounds:
 - 2-pentanone
 - 2-chloro cyclohexanone
- What is iodoform reaction? Cite an example.
- Explain why chloroacetic acid is a stronger acid than acetic acid?
- What is Koch reaction?

SECTION-B

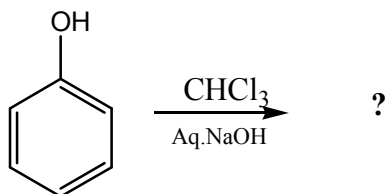
Answer any EIGHT questions

(8 ×5 =40 marks)

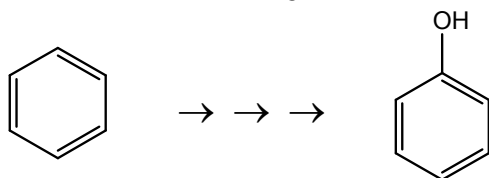
- Vinyl and phenyl halides are usually unreactive towards nucleophilic substitution reaction – Explain?
- a) Predict the product(s) .



- b) Treatment of 2-bromobutane with hot alcoholic KOH gives a mixture of three isomeric butane A,B and C. Predict A, B, and C .
- Complete the reaction with mechanism.



14. How will you prepare methanol and butanol from ethanol?
 15. Write the intermediate steps involved in the following reaction.



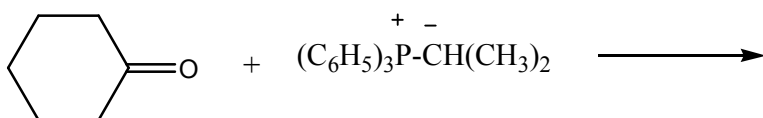
16. Discuss the mechanism of acid and base catalyzed cleavage of epoxide.
 17. Explain the action of diethyl ether with i) water ii) PCl_5 iii) HI .
 18. Explain Reformatsky reaction with an example.
 19. Explain the mechanism of 1,2 and 1,4 -Michael additions with suitable examples.
 20. Write the products when acetone reacts with a) dry HCl b) $\text{Conc. H}_2\text{SO}_4$ c) Ba(OH)_2 .
 21. Explain the mechanism for the addition of bromine to maleic and fumaric acids.
 22. Discuss the mechanism of esterification of carboxylic acid.

SECTION-C

Answer any FOUR questions

(4 × 10 = 40 marks)

23. Discuss the factors that influence $\text{S}_{\text{N}}2$ reaction.
 24. a) Compound A with molecular formula $\text{C}_2\text{H}_6\text{O}$ reacts with thionyl chloride to give compound B. Compound B reacts with magnesium to form Grignard reagent which is treated with acetone and the product is hydrolysed to give C. Predict A, B and C.
 b) Explain nitrosation of phenol with neat reaction. (6+4)
 25. a) Explain with mechanism, the preparation of 2-methoxy propane from ethyl bromide.
 b) n-Butyl alcohol has a much higher boiling point than its isomer diethyl ether. Explain. (5+5)
 26. a) Explain the mechanistic pathway of the following reaction and predict the products.



- b) Discuss Norrish Type I reaction with an example. (5+5)
 27. a) What is crossed aldol condensation? Cite an example with mechanism.
 b) Explain with suitable evidences, the base catalyzed hydrolysis of an ester. (5+5)
 28. a) How will you prepare acrylic acid from propionic acid?
 b) Explain the preparation and properties of phthalic acid with neat reactions. (5+5)

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