



Date: 31-10-2018

Dept. No.

Max. : 100 Marks

Time: 01:00-04:00

SECTION A

Answer all the questions

(10x2=20)

1. What are the essential and sufficient conditions for a molecule to be optically active?
2. Draw the R and S configuration of 2- butanol.
3. Predict the product when propene reacts with HBr in the presence of hydrogen peroxide?
4. Predict the product
2-Chlorobutane + Methanol + Na -----→?
5. Ethanol is less acidic than phenol. Why?
6. How will you prepare isopropyl alcohol from n-propyl alcohol?
7. What is Williamson's synthesis? Cite an example
8. Predict the product
Diethyl ether + Excess HI -----→ ?
9. How is o-nitro phenol prepared from o-dinitrobenzene?
10. What is the product formed when p-nitroaniline is treated with sodium nitrite and HCl in the presence of copper powder ?

SECTION B

Answer any eight questions:

(8x5=40)

11. What is asymmetric synthesis? Explain with an example.
12. What is atropisomerism? Cite an example.
13. Explain the process of resolution using chemical and biochemical methods.
14. Predict R and S configuration of D- and L-tartaric acid.

15. Explain S_NAr mechanism with an example?
16. Substantiate with mechanism, the formation of the following product.
 $3,3\text{-dimethyl-2-butanol} + \text{H}_2\text{SO}_4 \text{ -----} \rightarrow 2, 3\text{-dimethyl-2-butene}$
17. Explain the Hydroboration-Oxidation reaction of cyclohexene.
18. Explain with mechanism the preparation of propanol from ethylene oxide using Grignard reaction.
19. (i) Draw the structure of 12-crown-4. (ii) Explain the preparation of 18-crown-6.
20. Explain the effect of substituents on the basicity of aniline.
21. Write a note on sulphonamide and sulphadiazines.
22. Explain how primary and secondary amines are distinguished using Hinsberg's test.

SECTION C

Answer any four questions

(4x10=40)

23. a) Write a brief account on elements of symmetry.

b) Draw the Fischer, Sawhorse and Newman projection representations of 2, 3 –

Dibromobutane.

(4+6)

24 i) Explain S_Ni mechanism with a suitable example.

ii) Explain the mechanism and stereochemistry in the $E1$ elimination of 2-bromobutane in the presence of a base. **(5+5)**

25 i) Explain with mechanism the reaction of phenol with chloroform in the presence of a base.

ii) What is the action of phenol with benzene diazonium chloride? **(4+6)**

26. a) Give any one method of preparation of cyclic ethers with suitable examples.

b) Explain with mechanism the acid catalysed ring opening of epoxides. **(5+5)**

27. i) Write a note on Gabriel phthalimide synthesis of amines.

ii) How is 1,3,5 –trinitrobenzene prepared from toluene? **(5+5)**

28. a) Write a note on Sandmeyer and Gatterman reactions.

b) How are p-hydroxyazobenzene and p- aminoazobenzene prepared from aniline ?

(5+5)
