



SS – 329

V Semester B.Sc. Examination, Nov./Dec. 2018  
(CBCS) (F+R) (2016-17 and Onwards)

**CHEMISTRY – V**  
**Organic Chemistry**

Time : 3 Hours

Max. Marks : 70

- Instructions** : 1) The question paper has **two** parts. Answer **both** the parts.  
2) **Draw** diagrams and chemical equations **wherever** necessary.

**PART – A**

Answer **any eight** of the following questions. **Each** question carries **two** marks.

(8×2=16)

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1. Write R and S configuration of 2-amino propanoic acid.
2. What are the necessary conditions for a cyclic compounds to exhibit geometrical isomerism ?
3. How is acetone converted into isopropyl amine ?
4. Methanamine is more basic than ammonia, give reason.
5. How is pyrrole prepared from ammonium mucate ?
6. Mention one medicinal use of :
  - i) Ephedrine
  - ii) Caffeine.
7. State "Isoprene rule".
8. Why TMS uses as reference in NMR spectroscopy ?
9. Mention the electronic transition that takes place when UV radiation is passed through acetone.

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10. What are auxochromes ? Give an example.
11. What are direct dyes ? Give an example.
12. What are tranquilizers ? Give an example.

PART - B

Answer **any nine** of the following questions. **Each** question carries **six marks.**

(9×6=54)

13. a) Explain optical isomerism in lactic acid.  
b) Give the structure of 2, 3 - dichloro butane showing the plane of symmetry. (4+2)
14. a) Explain chemical method of resolution of racemic mixture.  
b) Mention the any two differences between enantiomers and diastereomers. (4+2)
15. a) How to distinguish between maleic acid and fumaric acid by cyclisation method ?  
b) How do you distinguish cis and trans isomers by dipole moment ? (4+2)
16. a) What is Hinsberg reagent ? How is it used to distinguish between primary, secondary and tertiary amines ?  
b) Explain Sandmeyer's reaction with an example. (4+2)
17. a) Explain the aromaticity of thiophene.  
b) How is Benzene diazonium chloride is converted into phenyl hydrazine ? Give the reaction. (4+2)
18. a) Discuss the general mechanism of electrophilic substitution of pyrrole.  
b) What happens when quinoline is nitrated ? Give equation. (4+2)



19. a) Write general characteristics of alkaloids.  
b) How would you prove that  $\alpha$ -terpineol contains one double bond ? (4+2)
20. a) How is glucose converted to fructose ?  
b) Write the Haworth structure of lactose. (4+2)
21. a) Describe the synthesis of nicotine from succinamide.  
b) Write the structure of zingiberene. (4+2)
22. a) How do you prove the presence of six membered ring in glucose by periodic acid oxidation method ?  
b) Write the structure of dichlofenac and mention its use. (4+2)
23. a) Explain the effect of conjugation on the UV spectra of organic compounds with an example.  
b) How is IR spectrum used to distinguish between free -OH and hydrogen bonded -OH groups ? (4+2)
24. a) Explain the graphical representation (interpretation) of IR spectra of benzoic acid.  
b) Mention the number of signals and multiplicity of the signals in the NMR spectrum of 1, 1, 2 trichloroethane. (4+2)
25. a) Give the synthesis of ibuprofen. /  
b) Give any two principles of green chemistry. (4+2)

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