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A - 3286

Reg. No. :

Name :

Fourth Semester B.Sc. Degree Examination, June 2016

First Degree Programme under CBCSS

CHEMISTRY

Core Course - III

CH 1441 : Organic Chemistry - I
(2013 Admissions Onwards)

Marks) Time : 3 Hours

Max. Marks : 80

SECTION - A

Answer **all** questions. **Each** question carries 1 mark.

1. What is meant by electromeric effect ?

2. What are carbenes ?

3. State Markownikoff's rule.

4. How will you convert ethylene to ethylene glycol ?

5. State Huckel's rule of aromaticity.

6. What is meant by the term Friedel-Crafts reaction ?

7. What are Grignard reagents ? Give one example.

8. What are diastereomers ?

9. Draw the structure of Z-2-chloro-but-2-ene.

10. Draw the most stable conformation of ethane.

(10×1=10 Marks)

SECTION - B

Answer **any 8** questions. **Each** question carries 2 marks.

1. Explain the geometry of carbocation.

2. Give any three difference between inductive and mesomeric effect.

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13. What is meant by the Baeyer's test for unsaturation? Give an example for the reaction.
14. Aniline is less basic than ammonia. Explain.
15. What is the major product obtained when naphthalene is heated with Con. HNO_3 at 60°C in the presence of Con. H_2SO_4 ? Give equation.
16. What are the defects of Kekule structure?
17. Alkyl Lithium compounds are more reactive than Grignard reagents. Why?
18. What is the product obtained when ethyl magnesium bromide reacts with allyl bromide? Give equation.
19. Explain the synthesis of Napsoken.
20. Maleic acid readily forms the anhydride compared to fumaric acid. Explain.
21. Draw the chair conformation of methyl cyclohexane.
22. What is meant by atropisomerism?

(8×2 = 16)

SECTION - C

Answer any 6 questions. Each question carries 4 marks.

23. Describe the determination of reaction mechanism by Kinetic studies.
24. What is Hydroboration? Give an example with explanation.
25. State and illustrate the Saytzeff rule.
26. What are annulenes? Give two examples for annulenes which obey Huckel rule of aromaticity.
27. Give the mechanism of Nitration of Benzene.
28. Explain the mechanism of Reformatsky reaction.
29. What are Frankland reagents? How do they react with alkylhalides and aryl halides?



Discuss the optical isomerism exhibited by tartaric acid.

Explain the term Asymmetric synthesis with suitable examples.

(6×4 = 24 Marks)

SECTION - D

Answer any 2 questions. Each question carries 15 marks.

Discuss and illustrate the significance of the various electron displacement effects in organic molecules.

What are SN^1 , SN^2 , SN^i reactions? Explain the mechanism of these reactions.

Briefly explain the preparation and synthetic application of acetoacetic ester and diethyl malonate.

Briefly discuss the optical isomerism observed among i) allenes ii) Biphenyls.

(2×15 = 30 Marks)