LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – **CHEMISTRY**

SIXTH SEMESTER – **APRIL 2016**

CH 6615 – SYNTHETIC ORGANIC CHEMISTRY

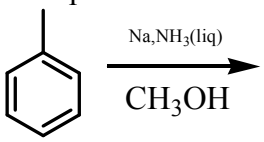
Date: 23-04-2016 Dept. No. Max. : 100 Marks

Time: 09:00-12:00

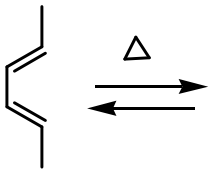
SECTION - A

Answer ALL the questions **(10x2=20 marks)**

1. What is convergent synthesis?
2. Define regiospecific reaction.
3. What is DIBAL? Write any one of its applications.
4. Predict the product



5. What are pericyclic reactions? Cite an example.
6. Predict the product.

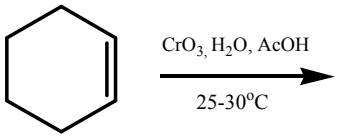


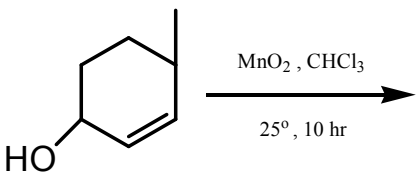
7. Write an example for crossed Aldol condensation.
8. Write the keto-enol tautomerism in cyclohexanone.
9. What is the efficiency of a reaction?
10. What is green chemistry?

SECTION – B

Answer any EIGHT questions **(8x5=40 marks)**

11. Define retrosynthesis. What is FGI? Explain with an example.
12. What is an Umpolung? Mention its significance.
13. Explain with mechanism the hydroboration of propene.
14. Predict the product.





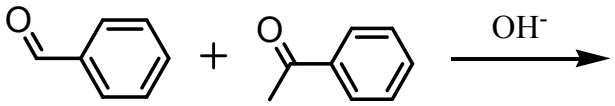
15. Write the mechanism of homogeneous catalytic hydrogenation.

16. Explain the role of electron releasing and electron withdrawing groups in Diels- Alder reaction.

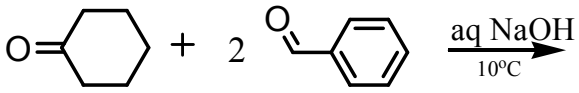
17. Explain con-rotation and dis-rotation in electrocyclization reactions.

18. How are cinnamic and succinic acid synthesized from acetoacetic ester?

19. Predict the products.



20. Predict the product.



21. Write the merits and demerits of microwave assisted organic synthesis.

22. What are ionic liquids? Explain its application in green synthesis with an example.

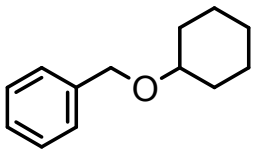
SECTION - C

Answer any FOUR questions **(4x10=40 marks)**

23. a) How is systematic disconnections of C-C bond done? Explain any two methods with suitable example. (5)

b) What are protecting groups? How is aldehyde protected and deprotected? (5)

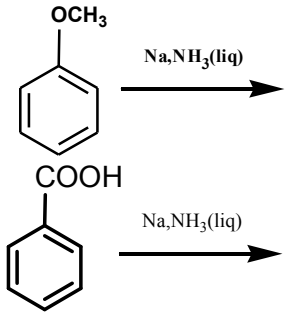
24. a) Write the retrosynthesis of (5)



b) Write a note on solid phase synthesis. (5)

25. a) Compare between Clemmensen and Wolff kishner reduction reactions with suitable examples.(5)

b) Predict the products.(5)



26. a) Explain the FMO approach for (2+2) Diels-Alder reaction. (5)

b) Explain (5,5)- sigmatropic rearrangement reaction with an example. (5)

27. a) How is the structure of diazomethane determined? Write its synthetic applications. (5)

b) Starting from malonic ester, how are succinic acid and Cinnamaldehyde synthesized? (5)

28. Explain the twelve principles of green chemistry.

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