LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

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

SIXTH SEMESTER – **APRIL 2018**

CH 6615– SYNTHETIC ORGANIC CHEMISTRY

Date: 23-04-2018 Dept. No. Max. : 100 Marks

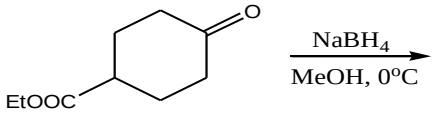
Time: 09:00-12:00

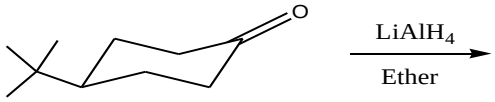
Part-A (10x2=20)
ANSWER ALL QUESTIONS

1. What is a synthon?
2. Why is convergent synthesis better than linear synthesis?
3. What is Wolf Kishner reduction?
4. What is hydrogenolysis? Cite an example.
5. Discusselectrocyclisation reaction with an example.
6. Write Diel's Alder reaction?
7. How is the carbanion formed in an active methylene group stabilized?
8. What is Cannizaro reaction?
9. What is solid state synthesis?
10. What is green chemistry?

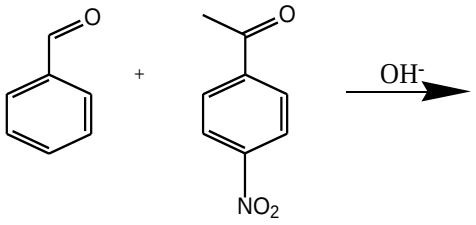
Part-B (8x5=40)
ANSWER ANY EIGHT QUESTIONS

11. Write a note on the use of protective groups in organic synthesis.
12. What is an Umpolung? Mention its significance.
13. Explain the mechanism of Birch reduction with an example.
14. Write a note on oxidation by per acids.
15. Predict the product :



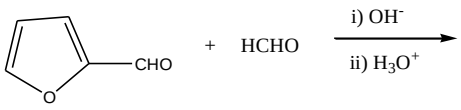


16. Explain group transfer reactions with any two examples.
17. Predict the products.



18. Write a note on thermal and photochemical FMO approach on cycloaddition reactions.

19. Predict the product with mechanism

(i) 

(ii) KMnO4 oxidation of 2-butene. **(3+2)**

20. What are the synthetic applications of malonic ester?

21. Write the advantages of microwave assisted organic synthesis.

22. Write a note on the experimental conditions required for green synthesis.

Part- C (4 X 10=40)
ANSWER ANY FOUR QUESTIONS

23. a) Write a note on retro synthetic analysis.

b) What is an activating group? Mention its applications. **(5+5)**

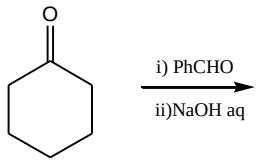
24. a) Describe the importance of functional group interconversion with suitable examples.
b) Compare the ability of reduction of $LiAlH_4$ and $NaBH_4$ on carbonyl compounds. **(5+5)**

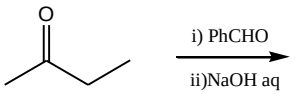
25. Explain with examples the oxidation reactions with Cr(VI) and Mn(VII). **(5+5)**

26 What are sigmatropic rearrangement reactions? Explain [3, 3] and [5, 5]sigmatropic shift with an example. **(5+5)**

27. a) Write a note on characteristic reactions of active methylene groups. **(6)**

b) Predict the product. **(2+2)**

i) 

ii) 

28. Explain the twelve principles of green chemistry.

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