



Date: 18-04-2018
Time: 01:00-04:00

Dept. No.

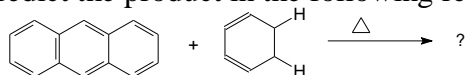
Max. : 100 Marks

Part-A

Answer **ALL** questions.

(10 x 2 = 20)

1. How is convergent synthesis superior over linear synthesis?
2. What is Brook rearrangement? Give an example.
3. Ylides are carbon nucleophiles-Justify.
4. How is the positive charge at the β -carbon stabilized in an organosilicon compound?
5. Write the ozonolysis reaction of 1,3-dimethylcyclo-1-hexene.
6. What is Tishchenko reaction?
7. State Woodward- Hoffmann rules for cycloaddition and electrocyclicization reaction.
8. Predict the product in the following reaction.



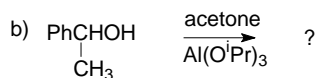
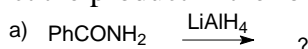
9. How does energy transfer take place within chromophores?
10. What is photoquenching? Mention its types.

Part-B

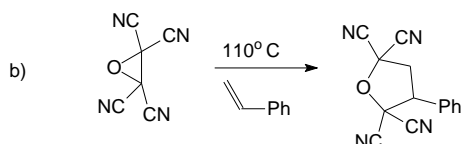
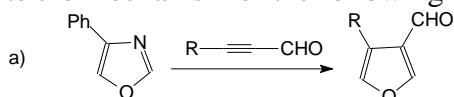
Answer any **EIGHT** questions.

(8 x 5 = 40)

11. Explain the use of FGI in the retrosynthetic analysis with a suitable example.
12. What are region selective and stereoselective reactions? Give suitable examples.
13. Prove with any two examples that Lithium diisopropyl amide is an enolate ion stabilizer.
14. Illustrate with an example, the use of protection and deprotection of alcohol and amine functional groups in organic synthesis.
15. Explain the use of silyl reagent as protecting group for alcohols.
16. Predict the product in the following reactions and write their mechanism.



17. Explain the one pot Ugi reaction with an example.
18. Write the electroreduction of carbonyl compounds with an example.
19. Write the mechanism of the following reactions.



20. Draw the correlation diagram for the cycloaddition of 1,3-butadiene and ethylene. Predict whether the reaction is feasible thermally or photochemically.

21. Derive Stern-Volmer expression.
 22. How does 4,4'-diphenylcyclohexa-2,5-dienone undergo photochemical rearrangement reaction?

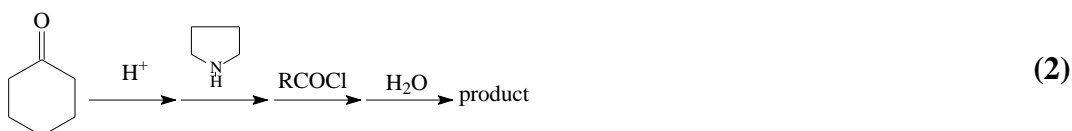
Part-C

Answer any **FOUR** questions. (4 x 10 = 40)

23a. Analyse retrosynthetically the following compounds and suggest a suitable forward synthesis for each.

- (i) 1-phenylpropene (ii) N-ethylethanamine (4 + 4)

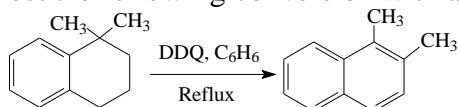
b. Complete the following reaction.



24a. Explain the interfacial and extraction mechanisms of phase transfer catalysis. (6)

b. Give the mechanism for the DCC and DMAP (cat.) mediated esterification reaction. (4)

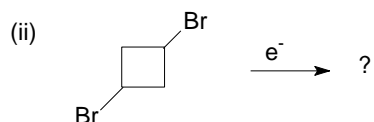
25a. Effect the following conversion with a suitable mechanism. (5)



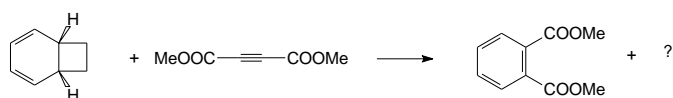
b. Write the mechanism of Sommelet Hauser oxidation reaction. (5)

26a. Compare Sonogashira coupling reaction with Negishi coupling reaction. (6)

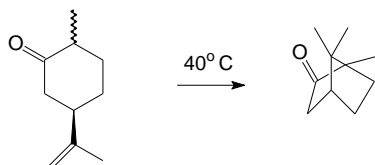
b. Predict the product(s) in the following reactions. (4)



27a. Identify the product in the following reaction and suggest a suitable mechanism. (5)



b. Write the mechanism of the following reaction. (5)



28a. Identify the products formed from the following photochemical reactions. (3+3)



b. Describe the photoreduction of benzophenone using isopropanol. (4)

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