

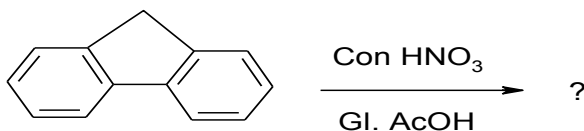
ST. JOSEPH'S COLLEGE OF ARTS & SCIENCE, (AUTONOMOUS)
CUDDALORE-1

ORGANIC CHEMISTRY -I I

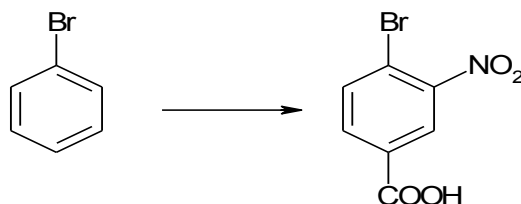
SUBJECT CODE: PCH805S

NAME OF THE STAFF HANDLING: A.AMALORPAVADOSS

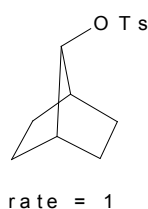
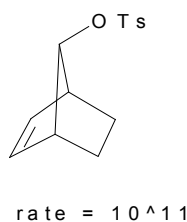
1. Predict the product of the following reaction and give the reason for the orientation of the substituent in the product: (4)



2. Write any four reagents without nitric acid used for the nitration of an aromatic compound. (4)
3. Give the general mechanism for aromatic electrophilic substitution. (4)
4. How will you prepare 1,2,3-triethyl benzene from Benzene? (4)
5. How will you do the following conversions? (4)

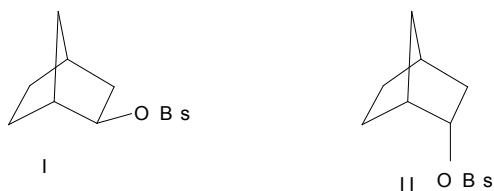


6. Write the mechanism for the conversion of aniline to fluorobenzene by Schiemann's reaction. (4)
7. Write the mechanism for the bromination of toluene with $\text{Br}_2 / \text{FeBr}_3$ (4)
8. a) Among the norbornane derivatives on acetolysis, the anti tosylate reacts 10^{11} times faster than I. Explain. (2)

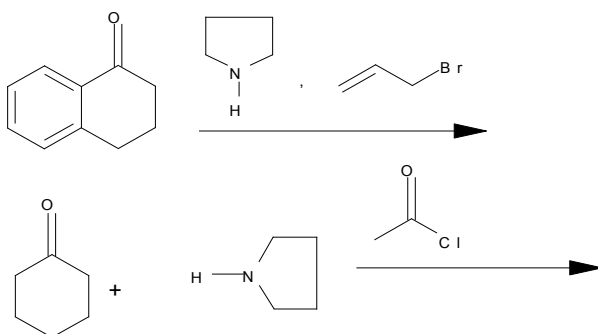


- b) Explain why during the acetolysis of exo and endo norbornyl brosylates

(I and II), the solvolysis of exo isomer is 350 times faster than the endo isomer.
(2)

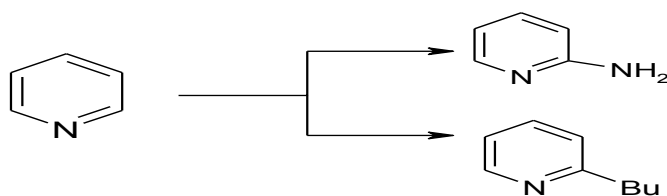


9. Propose mechanism and predict the products of the following reactions. (2+2)



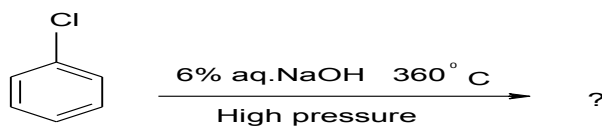
10. How will you do the following conversions. Write the mechanism.

(2+2)



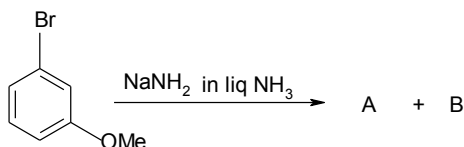
11. a) Predict the product of the following reaction.

2+2

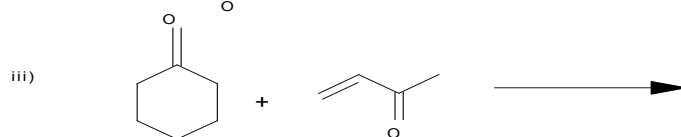
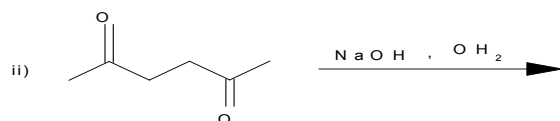
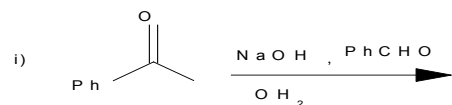
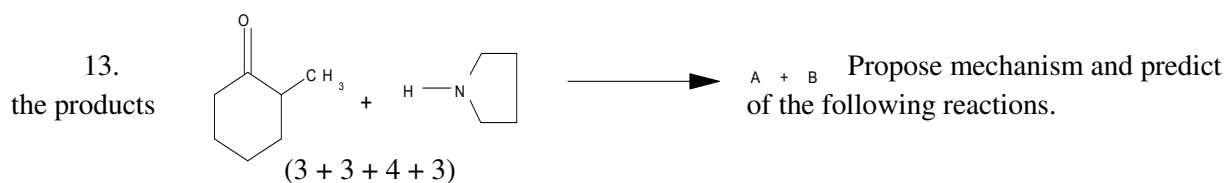


b) Suggest any one method for trapping the Benzyne intermediate.

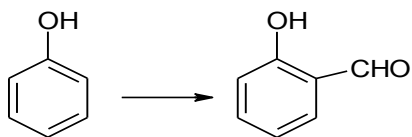
12 .a) Predict the major and minor products. (2+2)



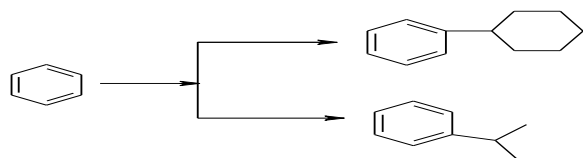
b) Predict the enamines formed in the reaction given below and label them as major and minor. (2)



14. a) How will you do the following conversions. Give the mechanism (6)

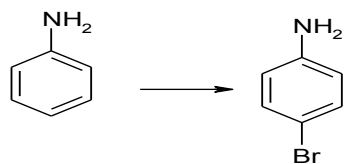


b) 2+2

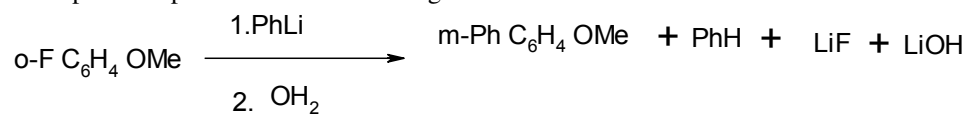


15. a) Write any two methods of generating Benzyne intermediate. (3+3+4)

b) How will you do the following conversion.

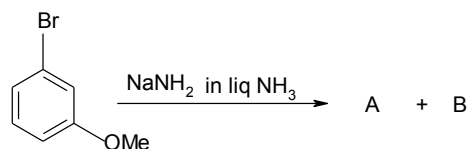


c. Explain the products of the following reaction.



16. Suggest any one method for trapping the Benzyne intermediate. 3

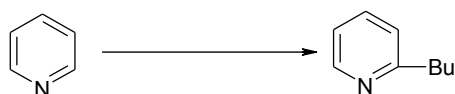
17. Predict the major and minor products. 5



18. Give the mechanism for any one formylation reaction.

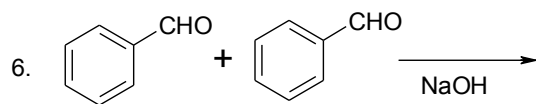
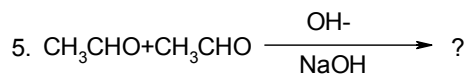
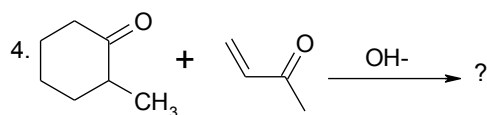
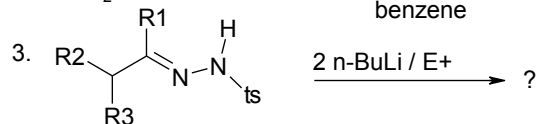
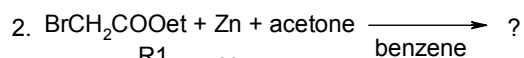
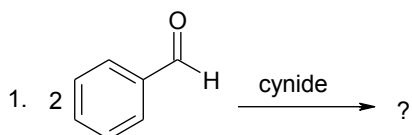
19. Write any two methods of generating Benzyne intermediate. 5

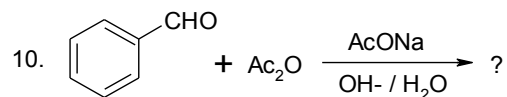
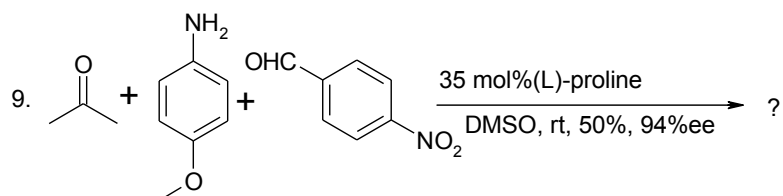
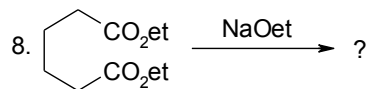
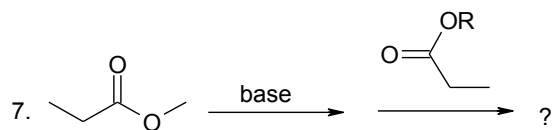
20. How will you do the following conversion. Write the mechanism. 3



21. Give the applications of pyridine N-oxide.

22. . Predict the products. 5

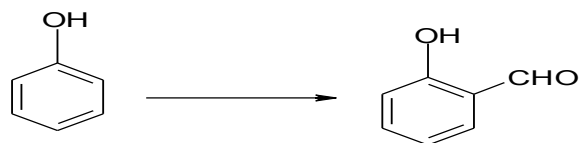




23. How will you do the following conversions? Write the mechanisms of those reactions.

(3 + 3+3)

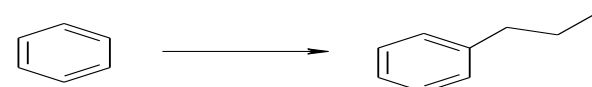
a)



b)



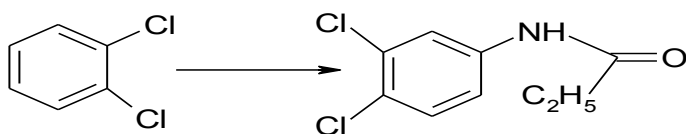
c)



24. Give any two electrophilic substitutions of Pyrrole.

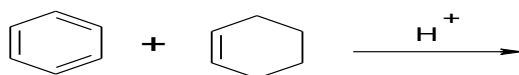
25. How will you do the following conversion?

(3)

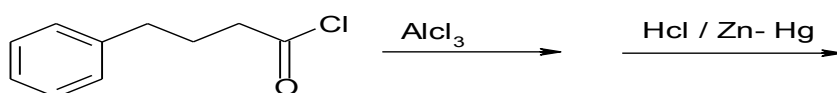


26. Predict the products and write the mechanisms of the reactions. (2 + 3 + 3 + 2)

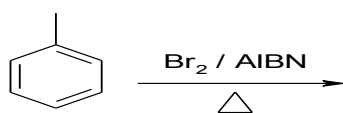
a)



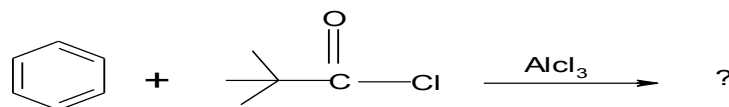
b)



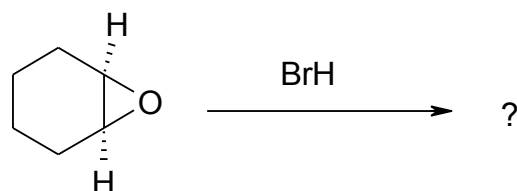
c)



d)



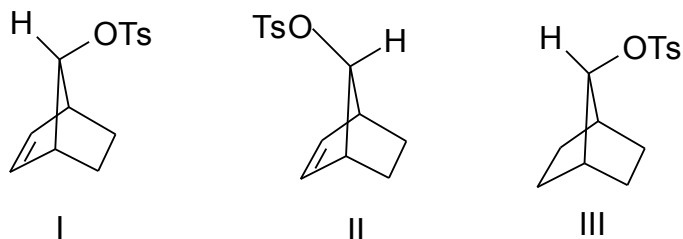
27. a) (2+5+3)



b) Explain the alkylation of active methylene compounds such as acetoacetic ester and diethyl malonate with examples. Give their mechanism.

c) Explain anchimeric assistance in the base catalyzed hydrolysis of 1,2-dichloroethane.

28. a) Among the following which one will involve in the reactions faster and give reasons. (4+3+3)

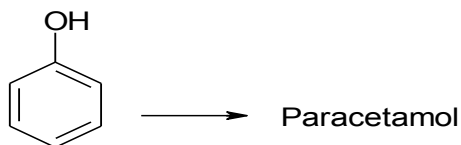


b) Compare the leaving ability of Phenoxide and Ethoxide ions. Explain.

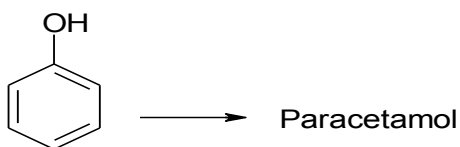
c) Compare the nucleophilicity of the following molecules and give the reason.



29. How will you effect the following conversion? (5)



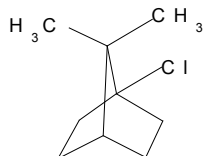
29. How will you effect the following conversion?



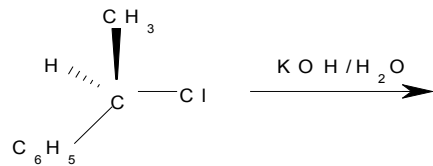
30. Write any four reagents without nitric acid used for the nitration of an aromatic compound.

31. a) Why halocyclopropanes are unreactive to undergo $\text{S}_{\text{N}}2$ reaction?

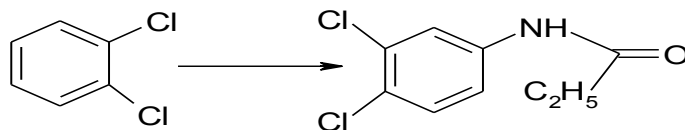
b) Why apocamphyl chloride is inert to hydroxide ion?



32. Propose mechanism and predict the product and the stereochemical outcome of the following reaction.



33. a). How will you do the following conversion? (5)



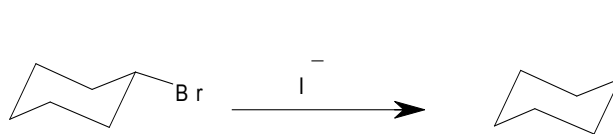
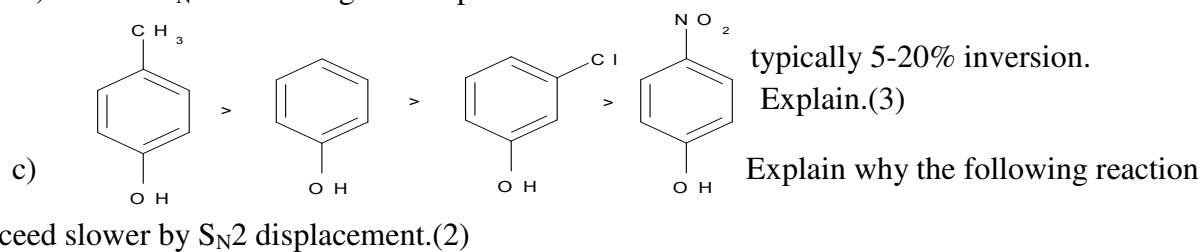
b). Write any two evidences for the Arrhenium ion mechanism. (5)

34. a) .Write the mechanism for the conversion of aniline to fluorobenzene by Schiemann's reaction. (5)

b). Write the mechanism for the bromination of toluene with $\text{Br}_2 / \text{FeBr}_3$ (5)

35. a) Explain the order of nucleophilicity observed during nucleophilic aliphatic substitution.(3)

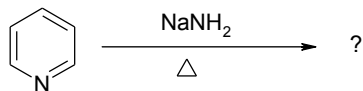
b) Several $\text{S}_{\text{N}}1$ reactions give complete racemization while in several cases there is



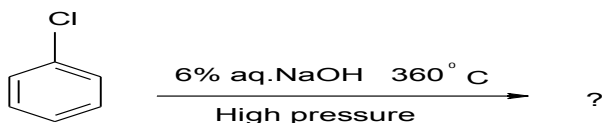
d) What is Walden inversion? (2)

36. Predict the products of the following reactions: (2+2)

a)

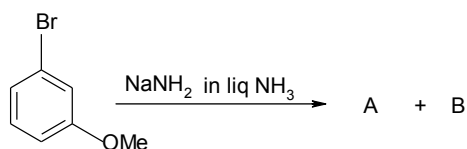


b)



37. Suggest any one method for trapping the Benzyne intermediate. 3

38. Predict the major and minor products. 5



39. How will you prepare 2,4-dinitro phenyl hydrazine from Sanger's reagent? 3

40. Discuss about the cope and Chagaev elimination 6

41. How will you do the following conversion. Write the mechanism. 3



42. Discuss the stereochemistry involved in the E2 elimination in a cyclohexane system. 3

43. Discuss Hoffmann and Saytzeff rule with example. 6

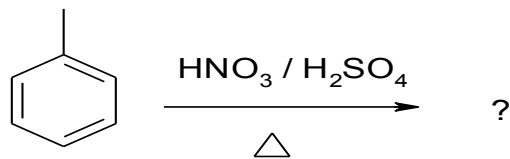
44. What is the difference between E1 and E2 elimination. Explain. 5

45. Write in brief about hydroboration. What is the advantage of using 9-BBN in hydroboration? 5

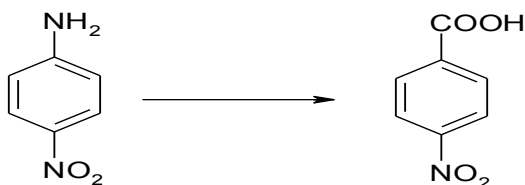
46. How will you do the following conversion? Give its mechanism. 3



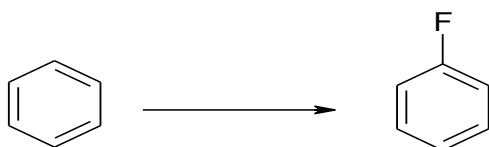
47. Predict the product and propose suitable mechanism for the following reaction. (4)



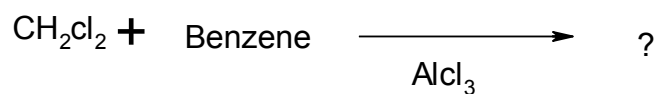
48. How will you do the following conversion? (4)



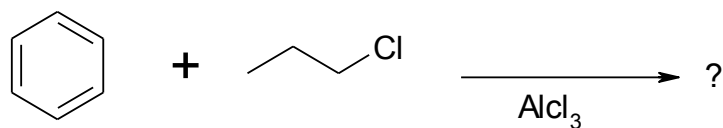
49. How will you do the following conversion? (4)



50. Predict the product and give the mechanism. (4)

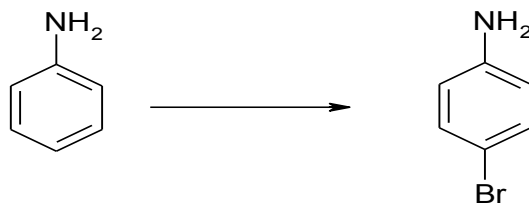


51. Predict the product and give the mechanism. (4)

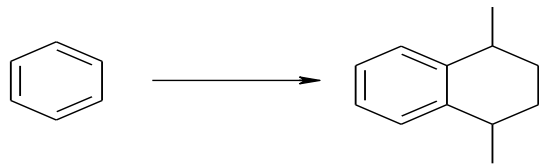


52. How will you do the following conversions? (3+ 4+3)

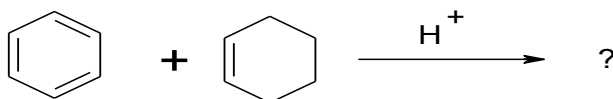
i)



ii)



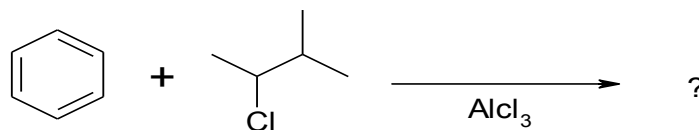
iii)



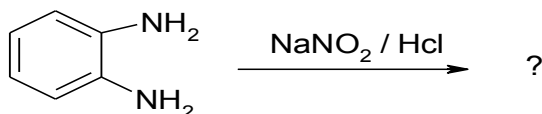
53. Predict the product and propose suitable mechanism.

(3+3+4)

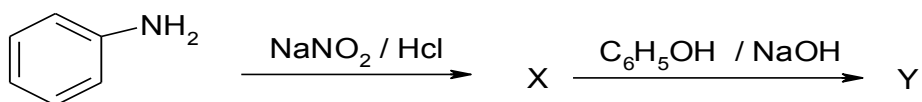
i)



ii)

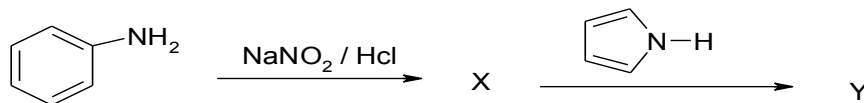


iii) Predict X and Y in the following reaction.



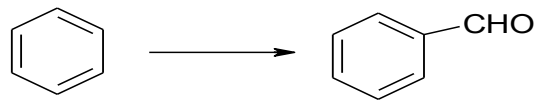
54) i) Predict X and Y in the following reaction.

(4+3+3)



ii) How will you do the following conversions?

a)



b)

