Total No. of Questions :6]

SEAT No. :

P2865

[Total No. of Pages : 5

[5023]-103
M.Sc. - I
ORGANIC CHEMISTRY
CHO - 150 : Organic Reaction Mechanism & Stereochemistry
(2013 Pattern) (5 Credits) (Semester - I)

Time : 3 Hours] *[Max. Marks : 50*

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Figures to the right indicate full marks.***
3) ***Answers to the two sections should be written in separate answer books.***

SECTION - I

Q1) Attempt any three of the following: **[9]**

a) Cyclooctotriene is non - aromatic. Explain.

b) Et –S – CH_2 – CH_2 – Cl undergoes hydrolysis 10^7 times faster than Eto – CH_2 – CH_2 – Cl. Explain.

c) Pyrrole exhibits acidic character, whereas pyridine shows basic character. Explain.

d) Cis 2-amine cyclohexanol as reaction with nitrous acid give only a single product, while trans isomer gives two products. Explain.

Q2) a) Write short note on (Any two) **[4]**

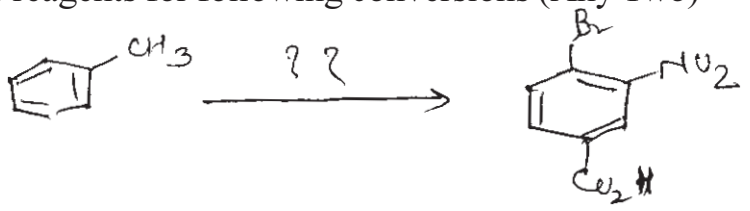
i) Benzyne intermediate.

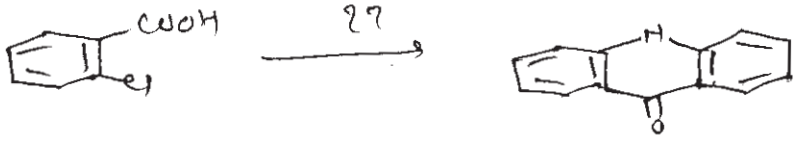
ii) Non - Classical Carbocation.

iii) Ipso Substitution reaction.

P.T.O.

b) Write reagents for following conversions (Any Two) **[4]**

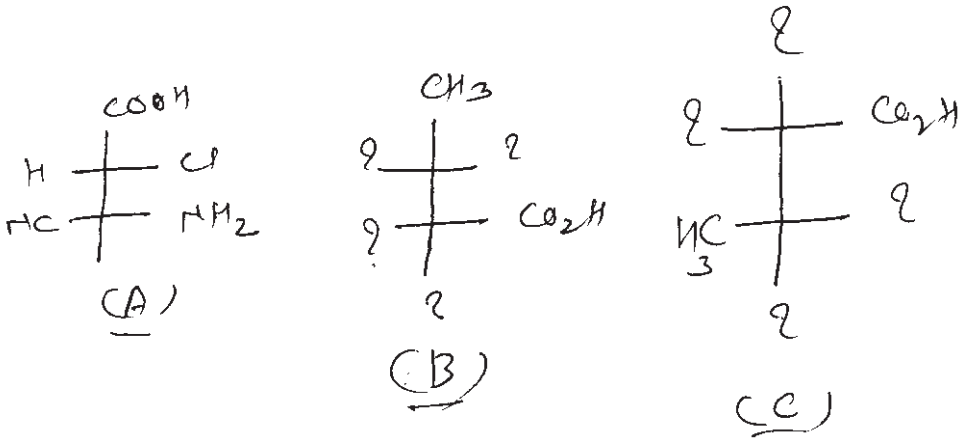
i) 

ii) 

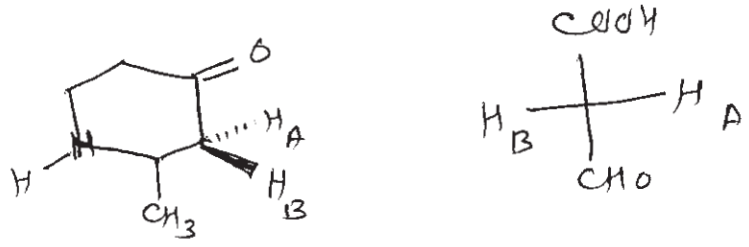
iii) 

Q3) Attempt <u>any four</u> of the following: **[8]**

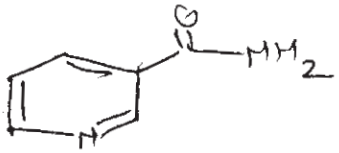
a) Write the equivalent structures B & C of the compound 'A'.

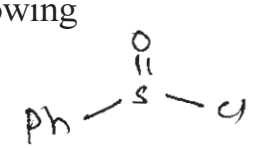


b) Assign Pro-R and Pro-S labels to H_A & H_B

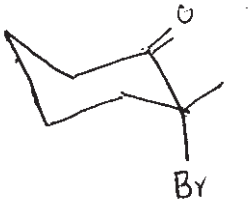


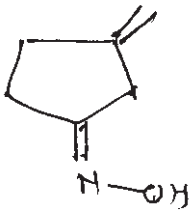
c) Assign Re & Si faces to the following



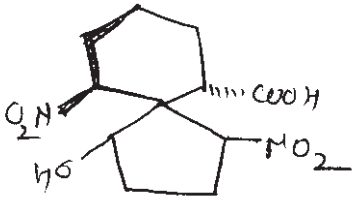


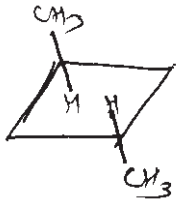
d) Assign R/S and E/Z configuration to the following.





e) Write the optical activity of the following.





SECTION - II

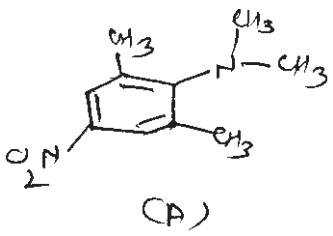
Q4) Attempt <u>any three</u> of the following: **[9]**

a) Vinyl chloride resists hydrolysis, while allyl chloride is readily hydrolysed by S_N^1 mechanism.

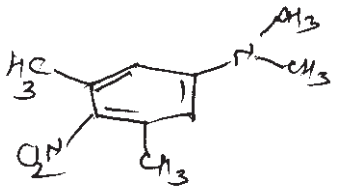
b) Explain E, cb mechanism with suitable example.

c) Nucleophilicity of Iodine, bromine & chlorine is in the order of $I^e > Br^e > Cl^e$ in protic solvent, where as the situation is reversed in a protic solvent. Why?

d) Which of the following base is strong? Why?



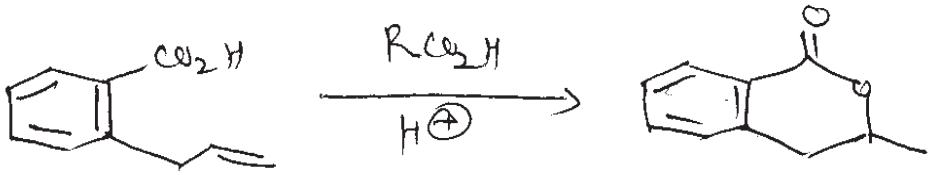
(A)



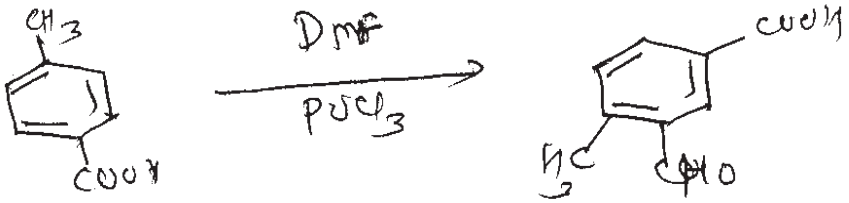
(B)

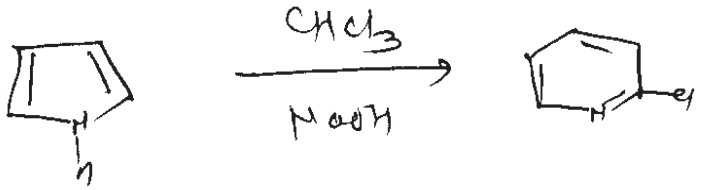
Q5) Suggest mechanism for the following (Any Four) **[8]**

a) 

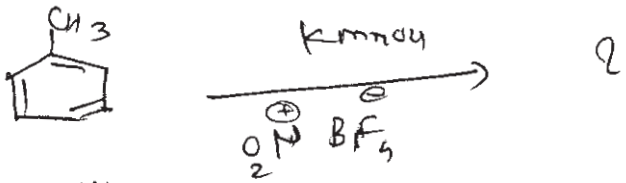
b) 

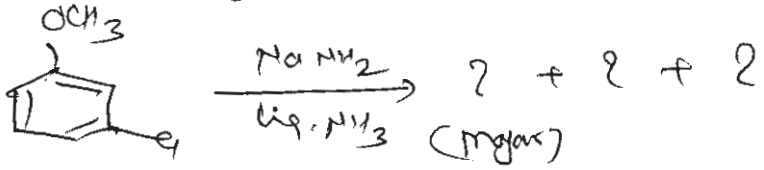
c) 

d) 

e) 

Q6) a) Predict the product/s **[4]**

i) 

ii) 

b) Attempt <u>any two</u> of the following: **[4]**

i) Write short note on Hoffmann elimination reaction.

ii) Explain S_N^i reaction with example.

iii) The compound (A) does not undergoes elimination reaction. Explain.