(Common for Analytical, Organic & Inorganic)

MASTER OF SCIENCE (CHEMISTRY) (CBCS - 2018 COURSE)
M.Sc. (Chemistry) Sem-I : WINTER :- 2021
SUBJECT: ORGANIC CHEMISTRY - I

Day : Monday
Date 7/2/2022

W-20141-2021

Time : 02:00 PM-05:00 PM
Max. Marks: 60

N.B.:

1) All questions are **COMPULSORY**.
2) Figures to the right indicate **FULL** marks.
3) Answers to both the sections should be written in **SEPARATE** answer book.

SECTION – I

Q.1 Explain **ANY THREE** of the following: **[15]**

a) Inversion of configuration occur in SN2 reaction. Give evidence.

b) Polar solvents increase the rate of SN1 reaction. Give evidence.

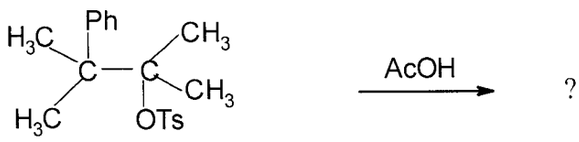
c) 4-methoxy-1-pentyl brasylate and 5-methoxy-2-pentyl braosylate on acetolysis gives same mixture of acetates.

d) 1:2:4 tribromo benzene with liquid NH_3 and $NaNH_2$ gives 1:3:5 tribromo benzene.

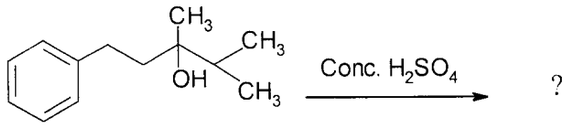
e) Write a note on : Cine substitution.

Q.2 Predict the product/s and suggest the mechanism for **ANY THREE** of the following: **[15]**

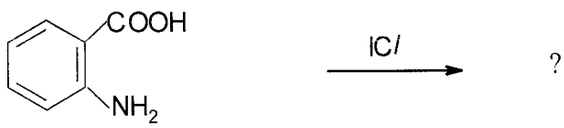
a)



b)



c)



d) PhN_2Cl + PhOH $\xrightarrow{NaOH}$?

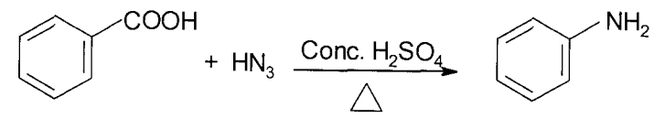
e) Indene + Br_2 $\longrightarrow$?

P.T.O.

SECTION – II

Q.3 Suggest the mechanism for **ANY THREE** of the following. Justify your answer. **[15]**

a)



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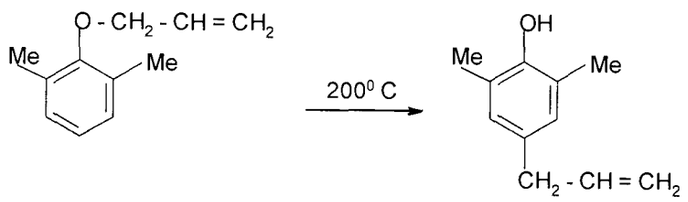
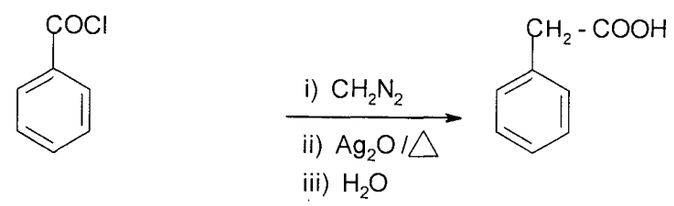
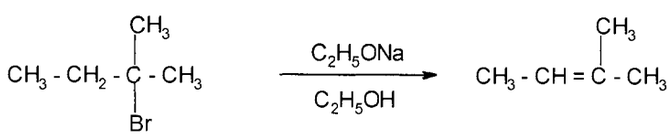


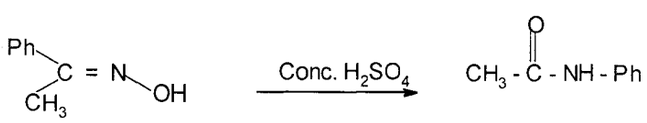
c)



d)



e)



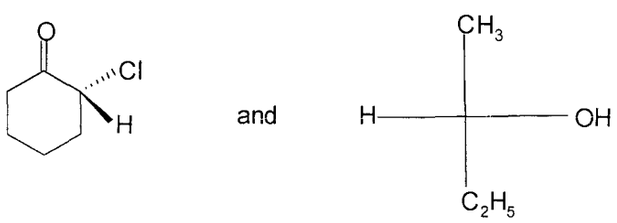
Q.4 Attempt **ANY THREE** of the following: **[15]**

a) Draw chair conformations of *cis* and *trans* 1, 4 – dimethyl cyclohexane. Comment on their stability and optical activity.

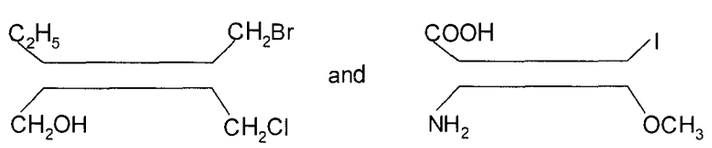
b) Discuss structure, properties and aromaticity of fullerene (C_{60}).

c) What are heteroannulenes? Discuss with suitable examples.

d) **i)** Assign R/S configuration to the following compounds. Indicate the sequence of groups clearly.



ii) Assign E/Z configuration to the following compounds. Justify your answer.



e) Write a note on : Pyrolytic elimination.

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