M. SC. (Analytical Chemistry) / M. SC. (Organic Chemistry) / M. SC. (Inorganic Chemistry) Sem-I (CBCS – 2018 Course) : SUMMER - 2019

SUBJECT : ORGANIC CHEMISTRY – I

Day : Friday
Date : 12/04/2019

Time : 03.00 PM TO 06.00 PM
Max. Marks : 60

S-2019-1163

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) Back side attack of Nu^- occur in SN2 reaction. Give evidence.

b) *Erythro* – 3 – bromo – 2 butanol with HBr gives *meso* – dibromide.

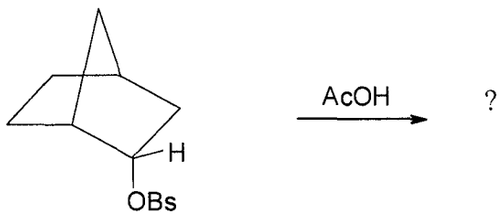
c) *cis* – 4 – t- butyl cyclohexyl brosylate hydrolyses slower than higher isotope of 'H' at C_β position.

d) Methyl phenyl ether on nitration with N_2O_5 yields ortho nitro compound as major product.

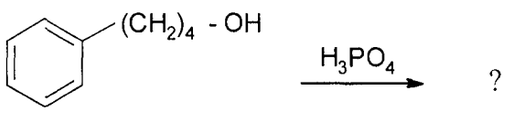
e) Write a note on Amident nucleophile.

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

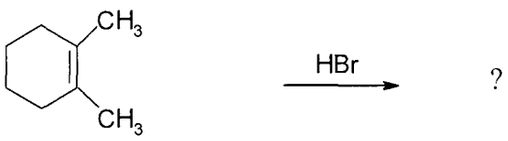
a)



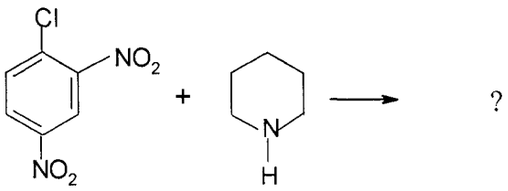
b)



c)



d)



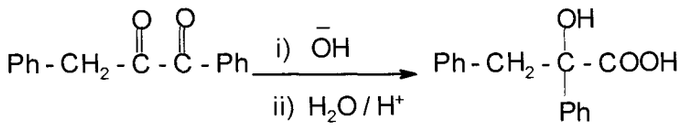
e) 2PhOH + HCHO $\xrightarrow{\text{Conc. } H_2SO_4}$?

P.T.O.

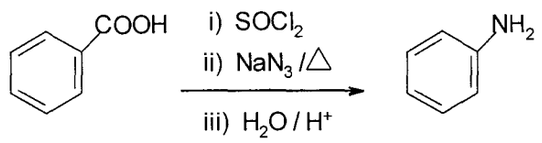
SECTION – II

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

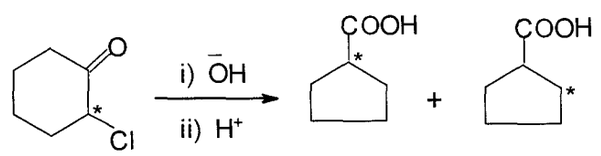
a)



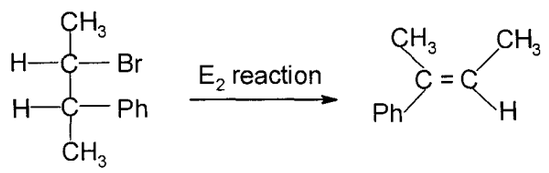
b)



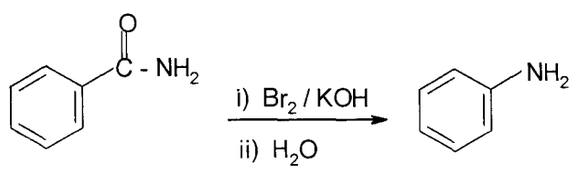
c)



d)



e)



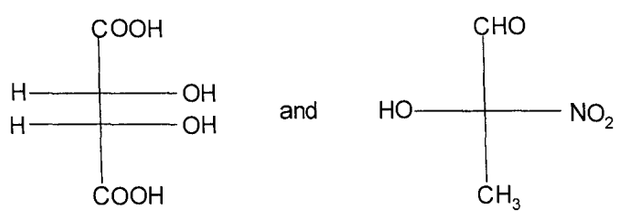
Q.4 Attempt **ANY THREE** of the following: **[15]**

a) Draw chair conformations of *cis* and *trans* 1, 2 – dimethyl cyclohexane. Comment on their stability and optical activity.

b) Discuss mechanism and stereochemistry of E_1 reaction.

c) What are annulenes? Discuss the structure, properties and aromaticity of [30] Annulene.

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 : Non-benzenoid aromatics.

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