

MASTER OF SCIENCE (CHEMISTRY) (CBCS - 2018 COURSE)
M.Sc. (Chemistry) Sem-I :SUMMER- 2022
SUBJECT : ORGANIC CHEMISTRY - I

Day : Wednesday

Time : 03:00 PM-06:00 PM

Date : 6/7/2022

S-20141-2022

Max. Marks : 60

N.B.:

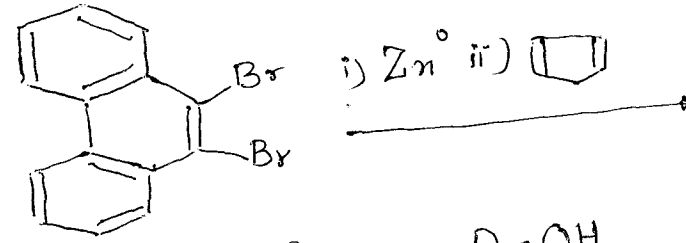
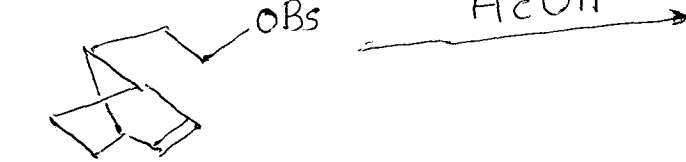
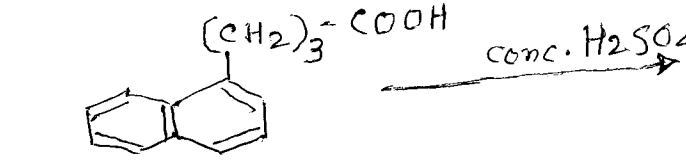
- 1) All question are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answers to both the sections should be written in **SEPARATE** answer book.

SECTION-I

Q.1 Explain **ANY THREE** of the following: **(15)**

- a) 3-chloro nitrobenzene on chlorination gives 3,6 dichloro nitrobenzene.
- b) Neopentyl chloride with $AlCl_3$ gives isopentyl chloride.
- c) *threo*- 3- Bromo-2 butane with HBr gives inactive dibromide compound.
- d) S_NAr mechanism is not like S_N2
- e) Write a short note on: IPSO substitution.

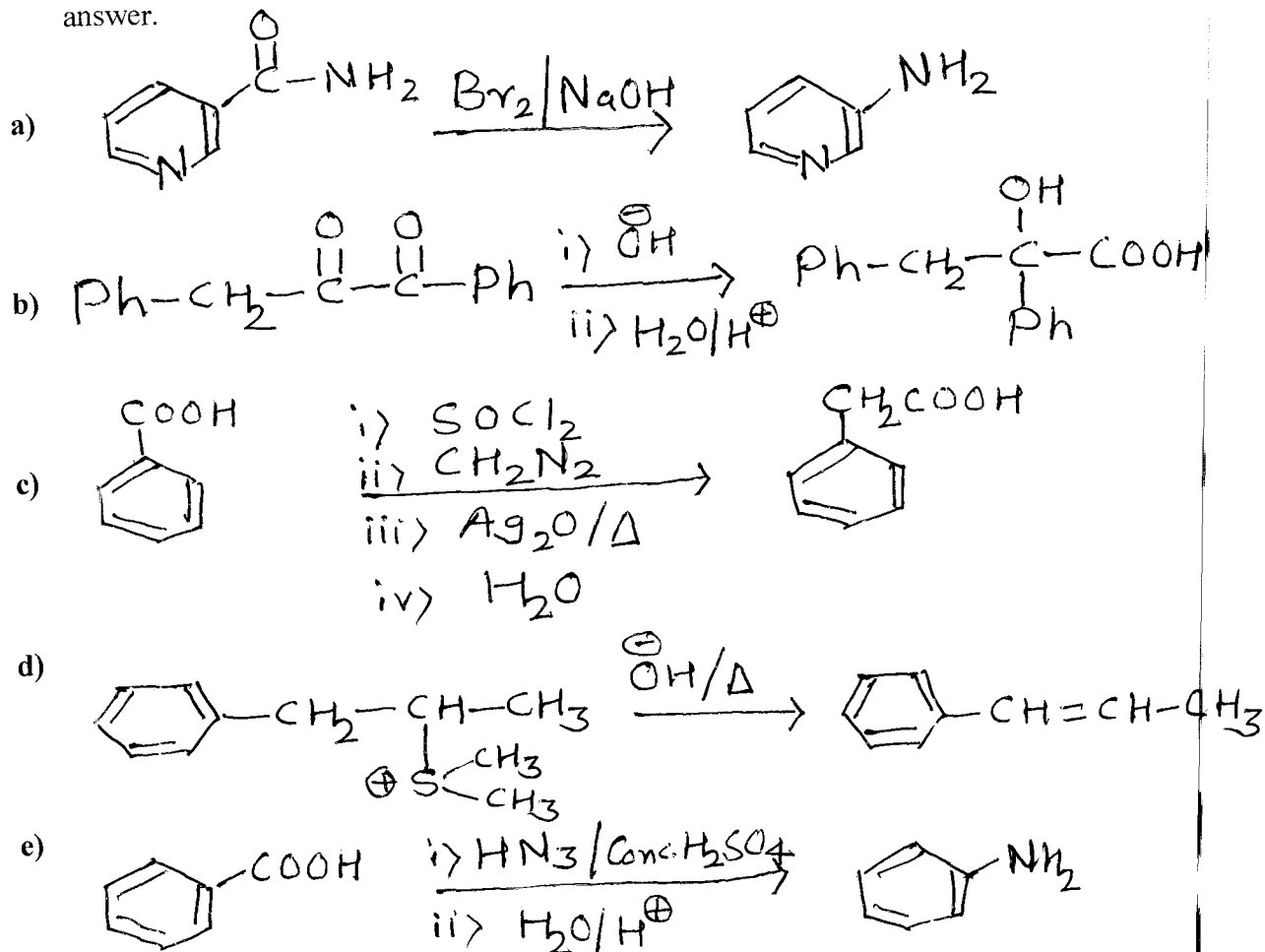
Q.2 Predict the product/s and suggest the mechanism for **ANY THREE** of the following: **(15)**

- a)  ?
- b)  ?
- c)  ?
- d) $PhN_2Cl + Ph-\overset{|}{N}-$?
- e) Acetylene dicarboxylic acid $\xrightarrow{Br_2}$?

P.T.O.

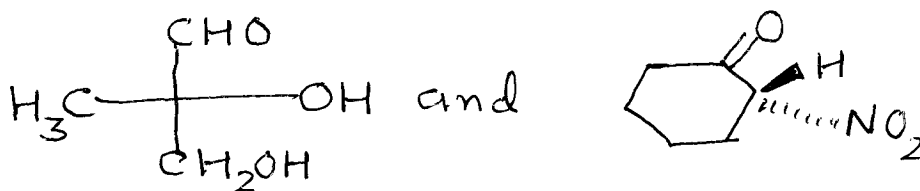
SECTION-II

Q.3 Suggest the mechanism for ANY THREE of the following. Justify your answer. (15)

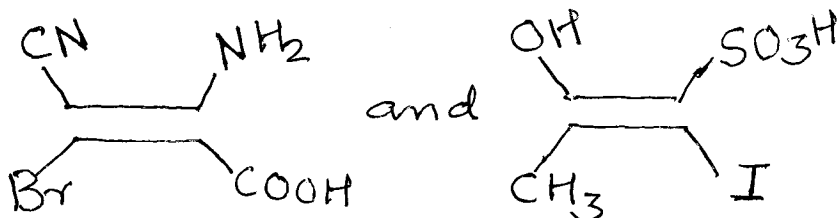


Q.4 Attempt ANY THREE of the following: (15)

- Draw chair conformations for *cis* and *trans* 1,2 dimethyl cyclohexane. Comment on their stability and optical activity.
- Discuss the mechanism and stereochemistry of E₂ reaction.
- What are non-benzenoid aromatics? Explain with examples.
- i) Assign R/S configuration to the following compounds. Indicate the sequence of groups clearly.



- Assign R/Z configuration to the following compounds. Justify your answer.



- Write a note on: Fullerene (C₆₀)