BACHELOR OF SCIENCE (CBCS-2018 COURSE)
S. Y. B. Sc. Sem-IV :SUMMER- 2022
SUBJECT : CHEMISTRY : ORGANIC & INORGANIC CHEMISTRY-IV

Day : Friday
Date : 8/7/2022

S-18381-2022

Time : 03:00 PM-06:00 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 **SAME** answer book.

SECTION – I

Q. 1 Attempt **ANY TWO** of the following: **(12)**

a) Describe the mechanism for nitration of chlorobenzene in detail.

b) Define and classify carbohydrates. Discuss in detail about sucrose.

c) Discuss sandmeyer reaction with two synthetic applications.

Q. 2 Attempt **ANY THREE** of the following: **(12)**

a) What is the action of following reagents on benzene, phenol and benzoic acid

i) HNO_3 / H_2SO_4 **ii)** Br_2 / CCl_4

b) Explain the use of green reagents in green chemistry with two examples.

c) Define and explain the following:

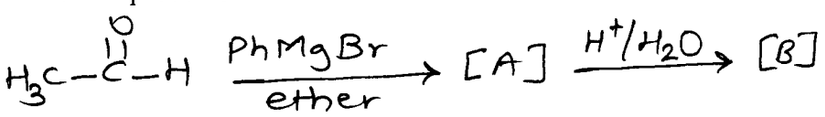
i) Mutarotation **ii)** Configuration of D-Glucose

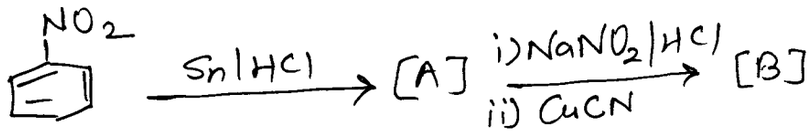
d) How will you effect following conversion:

i) Aniline to benzoic acid **ii)** Methane to acetic acid

Q. 3 A) Attempt **ANY ONE** of the following: **(06)**

i) Predict the products

a. 

b. 

ii) Explain the following with suitable examples:

a) Osazone formation **b)** Sucrose

P. T. O.

SECTION – II

Q. 3 B) Attempt **ANY ONE** of the following: **(06)**

i) Discuss the chemical composition and adulterations of the milk.

ii) Explain the Lux-Flood theory and explain the strength of acids and bases with respect to it.

Q. 4 Attempt **ANY TWO** of the following: **(12)**

a) What is hydrogen bond? What are essential conditions for the formation of hydrogen bond? Explain HF is liquid where as HBr, HI are gases at room temperature.

b) What are various concepts of acids and bases? Discuss the successes and limitations of Arrhenius theory.

c) What are silicones (heterotomic)? Write importance properties and applications of silicones.

Q. 5 Attempt **ANY FOUR** of the following: **(12)**

a) Explain the role of Hydrogen fluoride (HF) as a solvents.

b) Illustrate the difference between inter-molecular and intra molecular hydrogen bonding with examples.

c) What is desalination of water? Write a note on electro-dialysis technique.

d) Explain the levelling solvent and levelling effect of solvent.

e) Describe in short polymers containing phosphorus.

f) Discuss the importance of following nutrients:

i) Potassium **ii)** Calcium

* * * * *