

**S.Y.B.SC. SEM – IV (CBCS - 2016 Course) : WINTER - 2018**  
**SUBJECT : CHEMISTRY : ORGANIC & INORGANIC CHEMISTRY – IV**

Day : Saturday  
Date : 13/10/2018

**W-2018-0725**

Time : 03.00 P.M. To 06.00 P.M  
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]**

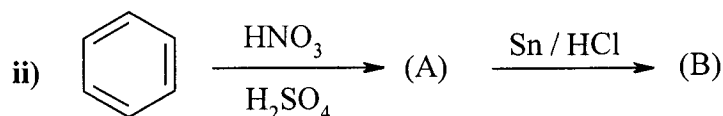
- a) What are carbohydrates? What is the action of following on glucose?  
i) Br<sub>2</sub> water    ii) H<sub>2</sub> / Ni    iii) dil. HNO<sub>3</sub>
- b) Give specific use of following reagents with example:  
i) aq. KOH    ii) Zn – Hg / HCl    iii) NaNO<sub>2</sub> / HCl
- c) Discuss Sandmeyer reaction with two synthetic applications.

**Q.2** Attempt **ANY THREE** of the following: **[12]**

- a) Describe the mechanism for nitration of Nitrobenzene by using mixed acid.
- b) Explain the use of green reagents in green chemistry with example.
- c) How will you effect following conversion:  
i) Ethanol to propanoic acid  
ii) Benzene to Benzoic acid
- d) Write a note on mutarotation.

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

- a) Predict the products A and B



- b) Write twelve principles of green chemistry.

**P.T.O.**

**SECTION – II**

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

- a) Describe Bronsted-Lowry acids-bases theory with suitable example. What are its merits and demerits?
- b) Explain the effect of hydrogen bonding on Melting and Boiling points of the compounds.

**Q.4** Attempt **ANY TWO** of the following: **[12]**

- a) Define following terms:
  - i) Homopolymer ii) co-polymer iii) Degree of polymerization iv) Polymer backbone v) Cross-linked polymers
- b) Explain Lewis acid-base concept. Write its merits and demerits.
- c) How hydrogen bonding affect 'solubility' of compounds?

**Q.5** Attempt **ANY FOUR** of the following: **[12]**

- a) Explain physiological role of nitrogen and phosphorus.
- b) Explain in brief polymers containing 'sulphur'.
- c) Define Antacid and explain anyone type of antacid.
- d) What are oxyacids? Write two examples.
- e) Write importance of hydrogen bonding.
- f) Explain the origin of Van-der-Waal's forces in brief.

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