

E 6018

(Pages : 2)

Reg. No.....

Name.....

**B.Sc. DEGREE (C.B.C.S.S.) EXAMINATION, OCTOBER 2013**

**Third Semester**

**Core Course—FUNDAMENTALS OF ORGANIC CHEMISTRY**

(Common for the Programmes B.Sc. Chemistry Model I and Model II B.Sc. Petrochemicals and B.Sc. Chemistry Environment and Water Management)

Time : Three Hours

Maximum Weight : 25

**Section A**

*Answer all questions.*

*Each bunch of four questions carries a weight of 1.*

**I. Fill in the blanks :**

- 1 Nitrating mixture used for the nitration of Benzene to Nitro Benzene is ———.
- 2 Structure of D Glyceraldehyde is ———.
- 3 The major product formed when HBr is added to propene in the absence of peroxide is ———.
- 4 Ester is formed when carboxylic acid is treated with ——— in presence of Conc.  $H_2SO_4$ .

**II.**

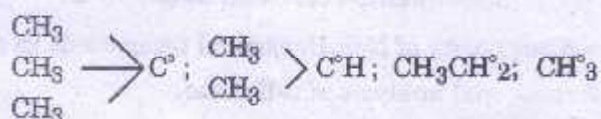
- 5 What are Carbonium ions ? Give *one* example.
- 6 Write the electrophile in sulphonation reaction.
- 7 What is the most stable conformation of methyl cyclohexane ?
- 8 What are Enantiomers ?

**III.**

- 9 State Saytzeff's rule.
- 10 Which is more acidic acetic acid or Formic acid ?
- 11 Draw the structure of Anthracene.
- 12 Give one example for condensation polymerisation.

**IV.**

- 13 Arrange the following in the order of stability :—



- 14 Define Electromeric effect.
- 15 Which is the strongest nucleophile among halide ions ?
- 16 Draw the Fisher projection of D Lactic acid.

(4 × 1 = 4)

**Turn over**

**Section B**

*Answer any five questions.  
Each question carries a weight of 1.*

- 17 Why do alkyl halides show nucleophilic substitution rather than electrophilic substitution reaction?
- 18 What do you mean by Deactivating groups. Give one example.
- 19 What is Diels-Alder reaction?
- 20 What is Hyper conjugation effect?
- 21 What are Diastereoisomers?
- 22 -OH group in Phenol is ortho and Paradirecting. Give reason.
- 23 Discuss the Mechanism of Nitration.
- 24 What do you mean by conformation? How does it differ from configuration?

(5 × 1 = 5)

**Section C**

*Answer any four questions.  
Each question carries a weight of 2.*

- 25 Friedel Crafts acylation is preferred to alkylation in synthetic purpose. Give reason.
- 26 Discuss briefly on Aromaticity of Naphthalene.
- 27 Draw the different conformers of cyclohexane and identify the most stable conformer. Give reason for your answer.
- 28 Discuss briefly on E-Z system of nomenclature.
- 29 Discuss the optical isomerism in Biphenyls with suitable examples.
- 30 Write the products formed when Naphthalene is sulphonated at different temperature? Give reason for your answer.

(4 × 2 = 8)

**Section D**

*Answer any two questions.  
Each question carries a weight of 4.*

- 31 Write briefly the Aromaticity of Non-Benzenoid compounds in detail.
- 32 Discuss the conformational analysis of n-Butane.
- 33 Differentiate between SN1 and SN2 mechanisms with suitable examples.

(2 × 4 = 8)