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CHE-502

Organic Chemistry

M.Sc. CHEMISTRY (MSCCH - 12/13/16/17)

First Year, Examination-2019

Time: 3 Hours **Max. Marks: 80**

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Note:- This paper is of Eighty (80) marks divided into two (02) Section A and B. Attempt the question contained in these sections according to the detailed instructions given therein.

Section-A

(Long Answer Type Question)

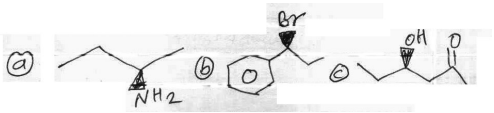
Note:- Section - A contains five (05) long answer-type questions of fifteen (15) marks each. Learners are required to answer any three (03) questions only. (3×15=45)

1. What are terpenoids? How they are classified? Discuss the methods for isolation of terpenoids with examples.

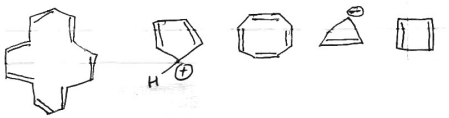
2. (a) How configurations differ from conformations? Discuss with examples.

(b) Discuss the factors affecting SN_1 and SN_2 reaction.

(c) Identify the chiral centres and assign R.S. nomenctatures to the following molecules.



3. Define the terms aromaticity, non-aromaticity and anti-aromaticity. Discuss type of aromaticity in following organic molecules.



4. Describe in brief

(a) Killiani Fisher synthsis

(b) N.G.P

(c) Electrophilic substitution reaction

(d) Synthesis of carbozole

(e) Cellulose

5. What are carbohydrates? How they are classified? Discuss.

1- Mutarotation

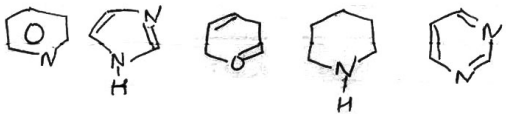
2- Osazone formation

Section-B

(Short Answer Type Question)

Note:- Section-B contains eight (08) short answer type questions of seven (07) marks each. Learners are required to answer any five (05) questions only. (5×7=35)

1. (a) Write nomendacture of following hiterocyclic compounds.



(b) Why is azulene aromatic?

2. Explain the following with examples.

(a) Enantiomers

(b) Diasteriorisomers

(c) Meso compounds

3. Discuss the following compititive reactions?

(1) SN_1 Vs SN_2

(2) E_1 Vs S_N

Discuss energy profile diagrams of each.

4. (a) What is Baker and Nathan effect? Discuss its importance in electronic displacement during reaction.

(b) Describe in brief the absolute configuration

5. What are alkaloids? Discuss their properties and classification with examples.

6. What are fused heterocyclic compounds? Discuss the synthesis of quinolir.

7. Write short notes on:

   (a) Chirality

   (b) Electrophilic addition to > C = C <

   (c) E, Z, nomenclature

8. Define the following terms with examples

   (a) Isoperene unit

   (b) Equatorial group

   (c) Protic Solvents

   (d) Resonance

   (e) Diaccharides

   (f) Annulene

   (g) Dextrorotation and laevorotation

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