

Hemchandracharya North Gujarat University

Bachelor of Vocation

Pharmaceutical Chemistry

End Term Examination, June, 2015

Subject: Fundamentals of Organic Chemistry

Time: 2 hrs

Date: 01/05/2015

Maximum marks: 50

Q.1 Answer all questions. Each question carries 1 mark .

(10*1=10 Marks)

1. Define Covalent bond.
2. What are antibonding and bonding orbitals?
3. Explain polarity of bonds using H-X. (X=halogens)
4. Define Optical activity.
5. Which of the following is chiral.
a. glucose b. 2-hydroxy-2-methylbutane
6. Give the hybridization for the following
a. Methane b. Ethane c. Ethyne d. Ethene
7. How many pi and sigma bonds are present in benzene.
8. Which of the following does not possess a carbonyl group.
a. aldehyde b. ketone c. acid d. ether
9. Which of the following is not a reactive intermediates
a. carbocation b. nitrene c. carbene d. alkene
10. Draw the structure for epoxide.

Q. 2 Answer any 5 questions. Each question carries 6 marks. (5*6=30 Marks)

1. Explain in detail intermolecular forces: intermolecular and intramolecular hydrogen bonding. Give three examples of Covalently bonded molecules.
2. Explain optical activity, chirality and stereoisomerism.

3. Define stereochemistry and explain the bond order of nitrogen molecule using MOT.
4. Give the synthesis for alkenes (any 2) and benzene (any 1).
5. Explain in detail carbocations and its stability.
6. Explain ionic bond, covalent bond and coordinate covalent bond with examples.

Q.3 Answer any 1 question. Each question carries 10 marks. (1*10=10 Marks)

1. Write a note on products obtained from alcohols and phenols.
2. Explain in detail definition, nomenclature, hybridization, synthesis and reactions of alkanes.