

UKA TARSADIA UNIVERSITY

B.Pharm. (2nd Semester)

Subject :030020202-Organic Chemistry I

Time : 10 am to 1 pm

Duration : 3 Hours

Date : 20/05/2014

Max. Marks : 70.

Instructions:

1. Attempt all questions.
2. Write each section in a separate answer book.
3. Make suitable assumptions wherever necessary.
4. Figures to the right indicate full marks allocated to that question.
5. Draw diagrams/figures whenever necessary.

SECTION - 1

Q-1 (A) Do as directed.

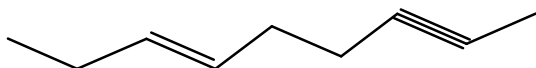
[07]

- I) Define electronegativity and dipole moment.
- II) Define proton and electron.
- III) Define singlet and triplet carbenes.
- IV) Write structure of 3-ethyl-2-methylhexane
- V) Write electronic configuration for chlorine (atomic number 17) and bromine (atomic number 35).
- VI) Explain why NH_3 has 1.46D dipole moment but NF_3 has 0.26D?
- VII) Define ionic bond and ionization energy

Q-1 (B) Answer the following in brief. (Any 4)

[08]

- I) Why tertiary carbocations are more stable than secondary and primary carbocation.
- II) Write postulates of Bohr's atomic model.
- III) State Markovnikov's rule with example.
- IV) What are the types of hydrogen bonding?
- V) What is the hybridization state of each of the carbon atoms in following compound



- VI) Write methods for preparation of free radicals.

Q-2 Answer the following.

[10]

- A) Define hybridization. Explain sp , sp^2 and sp^3 hybridization in carbon.

OR

- A) Write the reactions given by alkenes.
- B) Explain principle, Azimuthal, magnetic and spin quantum numbers.

OR

- B) Write methods of preparation for alkanes.

Q-3 Answer the following in detail. (Any 2)

[10]

- A) Define covalent bond. Give types and conditions of covalent bond.
- B) Explain in detail molecular orbital theory.
- C) Write methods for preparation of alkynes.

SECTION - 2

Q-4 (A) Do as directed.

[07]

- I) Alcohols act as acid and base. To support this statement give example with reaction.
- II) Define symmetrical and unsymmetrical ethers with examples.
- III) Define carbocyclic compounds and give its general formula.
- IV) Write structure for 2-ethoxybutane.
- V) What is Lucas reagent?
- VI) Define plane polarized light.
- VII) Define meso compounds.

Q-4 (B) Answer the following in brief. (Any 4)

[08]

- I) Write classification of dienes.
- II) Draw all possible conformation of n-butane and explain with help of energy profile diagram which conformer is more stable and why?
- III) Define the following terms with suitable examples
 - a) Stereo selective reaction b) Stereo specific reaction
- IV) Define the terms with suitable examples
 - a) Geometrical isomers b) Configurational isomers.
- V) Define the terms with suitable examples
 - a) Diastereomer b) Racemic mixture
- VI) Write structure of 1-bromo-3-methylhexane.

Q-5 Answer the following.

[10]

- A) Write methods for preparation and reactions of epoxides.

OR

- A) Write methods for preparation of alkyl halides.
- B) How will you differentiate in primary, secondary and tertiary alcohols by chemical reaction? Give two methods.

OR

- B) Explain mechanism and application of microwave based synthesis.

Q-6 Answer the following in detail. (Any 2)

[10]

- A) Write a note on green chemistry.
- B) Define resolution. Write methods of resolution.
- C) Explain SN^2 reaction along with its stereochemistry.