

PARUL UNIVERSITY
FACULTY OF APPLIED SCIENCE
M.Sc. Summer 2017-18 Examination

Semester: 2
Subject Code: 11205151
Subject Name: Organic Chemistry-II

Date: 07/05/2018
Time: 10:30 AM to 01:00 PM
Total Marks: 60

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

- Q.1. A) Essay type/ Brief note (4x2) (Each of 04 marks) (08)**
 (a) What are the conditions required for a molecule to be aromatic?
 (b) Draw the Frost circle diagram for benzene and cyclopentadienyl anion.
- Q.1. B) Answer the following questions (Any two) (04)**
 (a) Short note/ Brief note (2x2)/ Schematically label the figures (2x2) (Each of 02 marks) (04)
 1. What are metallocenes? Give one example with structural formula.
 2. What are annulenes? Give one example with structural formula.
 (b) Write a short note on fullerenes. (04)
 (c) Define annelation effect with an example. (04)
- Q.2. A) Answer the following questions. (04)**
 (a) Short note/ Brief note (2x2)/ Fill in the blanks. (Each of 02 marks) (04)
 1. Give one example of molecule having center of inversion.
 2. Show the various axial symmetry elements present in the benzene molecule.
 (b) Draw the structure of D- and L-Glyceraldehyde and name it according to R, S system? (04)
- Q.2. B) Answer the following questions (Any two) (03)**
 (a) Short note/ Multiple choice questions. (Each of 01 marks) (03)
 1. Define specific rotation.
 2. What is optical purity?
 3. The meso- form of an optical isomer is optically (Fill in the blank)
 (b) What are the different methods of resolution available? Explain any one with example. (03)
 (c) Write a short note on enzymes. (03)
- Q.3. A) Essay type/ Brief note (4x2) (Each of 04 marks) (08)**
 (a) What is Stobbe condensation?
 (b) Write an example for each of intramolecular Cannizzaro and Crossed Cannizzaro Reaction.
- Q.3. B) Answer the following questions (Any two) (04)**
 (a) Short note/ Brief note (2x2)/ Schematically label the figures (2x2) (Each of 02 marks) (04)
 1. What are Wittig reagents? Draw the structure.
 2. What are enolates?
 (b) Write a note on Dieckmann condensation. (04)
 (c) Explain the mechanism of witting reaction. (04)
- Q.4. A) Answer the following questions. (04)**
 (a) Short note/ Brief note (2x2)/ Fill in the blanks. (Each of 02 marks) (04)
 1. Write the reaction for nitration of Pyrrole.
 2. Draw the structure of one condensed heterocyclic compound.
 (b) Discuss the structure of heme group of hemoglobin molecule. (04)
- Q.4. B) Answer the following questions (Any two) (03)**
 (a) Short note/ Multiple choice questions. (Each of 01 marks) (03)
 1. Draw the structures of Furan and Oxazole.
 2. Draw the structure of Pyridine and Oxazines.
 3. Who controls the synthesis of proteins inside the cell?
 (b) Write a note on oxiranes. (03)
 (c) What are the different monomeric units present in DNA and RNA (03)