

PARUL UNIVERSITY
FACULTY OF APPLIED SCIENCE
M.Sc. Winter, 2018-19 Examination

Semester: 2**Subject Code: 11205151****Subject Name: Organic Chemistry-II****Date: 17/12/2018****Time: 10:30 am to 01:00pm****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 (Each of 04 marks) (08)**
 (a) What are the similarities and dissimilarities between aromatic and antiaromatic compounds. Explain with examples
 (b) Write a note on higher annulenes with examples
- Q.1. B) Answer the following questions (Any two) (04)**
 (a) Brief note (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 note on Frost circle (04)
 (c) Write a short note on fullerenes (04)
- Q.2. A) Answer the following questions. (04)**
 (a) Short note (Each of 02 marks) (04)
 1. What is a racemic mixture?
 2. Show the various axial symmetry elements present in the benzene molecule.
 (b) Show the various symmetry elements present in the cyclopentane molecule (04)
- Q.2. B) Answer the following questions (Any two) (03)**
 (a) Short note/ Multiple choice questions. (Each of 01 marks) (03)
 1. Define plane of symmetry
 2. How many chain isomers does butylene have?
 3. Isomerism that arises out of the difference in spatial arrangement of atoms or groups about the doubly bonded carbon atoms are called as -----
 (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) Brief note (Each of 04 marks) (08)**
 (a) What is Stobbe condensation?
 (b) Write a note on Cannizzaro reaction with mechanism
- Q.3. B) Answer the following questions (Any two) (04)**
 (a) Brief note (Each of 02 marks) (04)
 1. What are Wittig reagents? Draw the structure.
 2. What are enolates?
 (b) Explain the stereochemistry of Sharpless asymmetric epoxidation (04)
 (c) What is Reformatsky reaction? Explain the mechanism. (04)
- Q.4. A) Answer the following questions. (04)**
 (a) Short note (Each of 02 marks) (04)
 1. Write the reaction for nitration of Pyrrole.
 2. Write a note on Purines.
 (b) Draw the structure of haemoglobin (04)
- Q.4. B) Answer the following questions (Any two) (03)**
 (a) Short note (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)