

Enrollment No: \_\_\_\_\_ Exam Seat No: \_\_\_\_\_

# C.U.SHAH UNIVERSITY

## Summer Examination-2017

Subject Name: Organic Chemistry-II

Subject Code: 5SC02OCH1

Branch: M.Sc.(Chemistry)

Semester: 2

Date: 04/05/2017

Time: 02:00 To 05:00

Marks: 70

### Instructions:

- (1) Use of Programmable calculator and any other electronic instrument is prohibited.
- (2) Instructions written on main answer book are strictly to be obeyed.
- (3) Draw neat diagrams and figures (if necessary) at right places.
- (4) Assume suitable data if needed.

---

### SECTION – I

**Q-1** Attempt the following questions (07)

- Define stereochemistry? (1)
- Draw the structure of Erythro 2,3-dichlorobutane. (1)
- Draw the structure of (R)-2-hydroxybutane. (1)
- Draw the structure of (S)-2-hydroxy-3-chloropropanal. (1)
- Draw the structure of (E) 2-butene. (1)
- Draw the structure of (Z)-1,2-dichloroethane. (1)
- Define topicity and chirality. (1)

**Q-2** Attempt all questions (14)

- Discuss the Cahn-Ingold-Prelog nomenclature. (5)
- Explain Fisher and sawhorse projection in stereochemistry. (5)
- Write a note on (4)
  - Epimers and
  - Anomers.

OR

**Q-2** Attempt all questions (14)

- Write a note on role of prochiral in organic chemistry. (5)
- Discuss the chiral compounds without stereocenter. (5)
- Write a note on (4)
  - Homomers,
  - Plane and point of symmetry

**Q-3** Attempt all questions (14)

- Discuss the stereochemistry of cyclic compounds (6)
- Write notes on (8)



1. E-Z Nomenclature and
2. Newman Projection formula.

**OR**

- Q-3 Attempt all questions (14)**
- a. What are isomers? Discuss complete classification of isomerism. (6)
  - b. Write a note on (8)
    1. Homomorphous ligand topology and
    2. Stereoheterotopic ligands.

**SECTION – II**

- Q-4 Attempt the following questions (07)**
- a. Define photochemical reaction. (1)
  - b. What is intersystem crossing? (1)
  - c. Define wavelength and wave number. (1)
  - d. Write the wavelength range of microwave and X-ray radiations. (1)
  - e. Define adsorption. (1)
  - f. Define Stokes shift with proper diagram. (1)
  - g. Define quenching. (1)
- Q-5 Attempt all questions (14)**
- a. What is reaction mechanism? Give the classification of reaction mechanism. (5)
  - b. Discuss the perturbation molecular orbital theory. (5)
  - c. Discuss the HOMO and LUMO relationship in [4+2] cycloaddition reaction. (4)

**OR**

- Q-5 Attempt all questions (14)**
- a. Discuss the effects of light intensity on the rate of photochemical reaction. (5)
  - b. What is pericyclic reaction? Discuss types of pericyclic reactions. (5)
  - c. Write a note on (4)
    1. Conrotatory and Disrotatory motion,
    2. In phase and out of phase,
    3. Suprafacial and Antarafacial and
    4. [2+2] Cyclo addition reaction.

- Q-6 Attempt all questions (14)**
- a. Explain types of photochemical reaction. (7)
  - b. Write a note (7)
    1. Frontier molecular orbital and
    2. Woodward –Hoffmann rule.

**OR**

- Q-6 Attempt all questions (14)**
- a. Discuss the photochemical reactions of carbonyl compounds. (7)
  - b. Write a note (7)
    1. Photo-Fries rearrangement of anilide and
    2. Frontier orbital theory.

