



**NBW-003-011404** Seat No. \_\_\_\_\_

**M. Sc. (Industrial Chemistry) (Sem. IV)  
(CBCS) Examination**

April / May - 2017

**IC - 404 : Advanced Organic Chemistry**

**Faculty Code : 003**

**Subject Code : 011404**

Time :  $2\frac{1}{2}$  Hours]

[Total Marks : 70

**Instructions:**

- 1) All Questions are compulsory.
- 2) Each question carries 14 marks.

**1 Answer any Seven out of the following ten questions: 14**

1. Define stereochemistry and optically active compounds.
2. Explain enantiomers and diastereomers with examples.
3. Write the principle of Knoevenagel condensation reaction.
4. Discuss the principle of Stille coupling.
5. What is ionic liquid? Explain with examples.
6. Describe dextrorotatory, levorotatory and racemic mixture.
7. Give two application of Strecker reaction
8. Define green chemistry and sustainable development.
9. Explain P & M notation.
10. Discuss Principle and advantages of Microwave irradiation reaction.

**2 Answer any Two from the following three questions: 14**

1. Discuss Cyclosteroisomerism of 1, 2 & 1, 4 dimethyl cyclohexane.
2. Suzuki cross coupling reaction.
3. Give classification of isomerism with examples.

**3 Answer the following Two questions: 14**

1. Write a note on R-S and D-L configuration.
2. Discuss Sharpless epoxidation reaction.

**OR**

**3 Answer the following Two questions: 14**

1. Discuss any seven principle of green chemistry.
2. Principles and applications of following reactions using ionic liquids
  - i) Diels Alder Reactions
  - ii) Friedel Crafts Alkylation

**4 Answer any Two from the following three questions: 14**

1. Write principle, mechanism and application of Negishi reaction.
2. Discuss preparation and applications of lithium organocuprates.
3. Principles and applications of microwave assisted synthesis:
  - i) Biginelli reaction
  - ii) Ugi coupling

**5 Answer any Two from the following four questions: 14**

1. Give three applications of following reagents:
  - (i)  $\text{NaBH}_4$
  - (ii)  $\text{NaCNBH}_3$ .
2. Reformatsky reaction.
3. Discuss the stereochemistry of Axial compounds.
4. Draw the Fisher projection and Wedge formula for following compounds
  - i)
  - ii)

