

**PARUL UNIVERSITY**  
**FACULTY OF APPLIED SCIENCE**  
**M.Sc. Winter 2019-20 Examination**

**Semester: 2****Subject Code: 11205151****Subject Name: Organic Chemistry–II****Date: 09/12/2019****Time: 2.00 pm to 4.30 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) Brief note (4x2) (Each of 04 marks) (08)**

- (a) What is disconnection approach? Explain Functional Group Interconversion with example?
- (b) Explain protection of alcoholic group in presence of other functional group using Trimethylsilylchloride (TMSCl).

**Q.1. B) Answer the following questions (Any two)**

- (a) Short note (2x2) (Each of 02 marks) (04)
  1. Give one reaction of Carbon-Carbon single bond formation.
  2. What are chiral auxiliaries?
- (b) Explain Hydroboration-oxidation. (04)
- (c) Discuss the mechanism of Suzuki reaction. (04)

**Q.2. A) Answer the following questions.**

- (a) Short note/ Brief note (2x2)/ Fill in the blanks. (Each of 02 marks) (04)
  1. Discuss Ullman coupling reaction.
  2. Why air and moisture are excluded in reactions involving Grignard reagents?
- (b) Write the reaction of  $\text{CH}_3\text{MgCl}$  with (04)
  - (a)  $\text{CO}_2$
  - (b)  $\text{HCHO}$

**Q.2. B) Answer the following questions (Any two)**

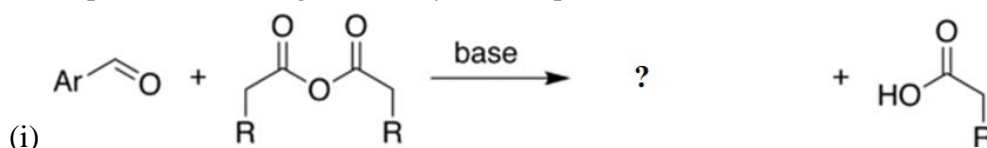
- (a) Short note/ Multiple choice questions. (Each of 01 marks) (03)
  1. Define Schlenk equilibrium?
  2. What is the repeating unit in silicones?
  3. Organotin compounds are generally used as.....agents.
    - (a) Anti-cancer
    - (b) Anti-fungal
    - (c) Anti-viral
    - (d) Antibiotics
- (b) Explain the mechanism of Sonogashira reaction. (03)
- (c) What is resolution? Explain any one approach. (03)

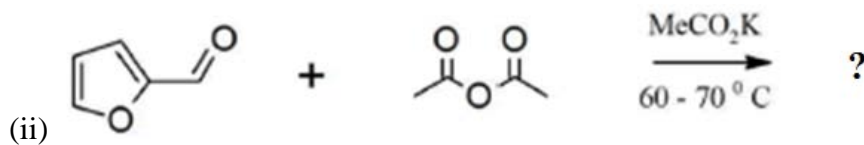
**Q.3. A) Essay type/ Brief note (4x2) (Each of 04 marks) (08)**

- (a) Discuss Fukuyama Coupling.
- (b) Discuss [1,2] Wittig rearrangements.

**Q.3. B) Answer the following questions (Any two)**

- (a) Brief note (2x2) (Each of 02 marks) (04)
  1. Complete the following reaction by suitable products formed in Perkin reaction





2. How will you distinguish between quinoline and isoquinoline on the basis of their oxidation with  $\text{KMnO}_4$ ?

(b) Draw the molecular orbital structure of Pyridine and furan. (04)

(c) Write a note on Cannizzaro reaction. (04)

**Q.4. A) Answer the following questions.**

(a) Brief note on the following (Each of 02 marks) (04)

1. Sharpless asymmetric epoxidation.
2. Friedel-Crafts alkylation.

(b) Point out any two major differences between hemoglobin and myoglobin. (04)

**Q.4. B) Answer the following questions (Any two)**

(a) Multiple choice questions/Fill in the blanks (Each of 01 marks) (03)

1. Choose a correct order of aromaticity in the following:

- (i) Benzene > thiophene > pyrrol > furan    (ii) Thiophene > Benzene > furan > pyrrol  
 (iii) Pyrrol > furan > thiophene > Benzene    (iv) Furan > Pyrrol > Thiophene > Benzene

2. Monomer unit in the structure of DNA is

- (i) nucleosides                      (ii) nucleotides  
 (iii) Pentose sugar                  (iv) nucleobases

3. In Robinson Annulation Michael addition is followed by a/an ..... reaction.

(b) Explain Skraup's synthesis. (03)

(c) Write a short note on selectivity of the host molecules in biological system. (03)