

Seat No. : _____

JF-112

June-2022

M.Sc., Sem.-II

408 : Chemistry

(Organic Chemistry)

Time : 2 Hours]

[Max. Marks : 50

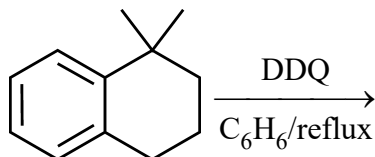
- Instructions :**
- (1) All questions in **Section – I** carry equal marks.
 - (2) Attempt any **three** questions in Section –I.
 - (3) Questions in **Section – II** is COMPULSORY.

Section – I

- (A) Explain reactions of cyclic ketones and acyclic ketones in photochemistry. 7

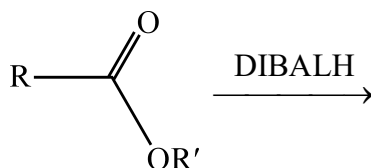
(B) Give principle, mechanism and synthetic applications of Nazarov cyclization and Knoevenagel reaction. 7
- (A) Give synthesis and reactions of imidazole and thiazole. 7

(B) Discuss selectivity, mechanism and uses of n-butyl lithium and complete the following reaction with mechanism : 7



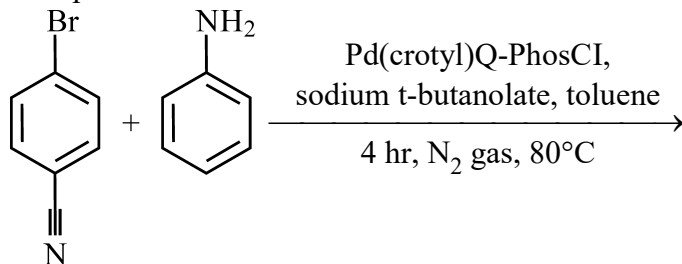
- (A) Give principle, mechanism with advantages and disadvantages of Ullmann reaction and Sonogashira coupling. 7

(B) Discuss photoreduction of benzophenone to benzpinacol with reaction mechanism. 7
- (A) Discuss selectivity, mechanism and uses of LDA and complete the following reaction with mechanism : 7

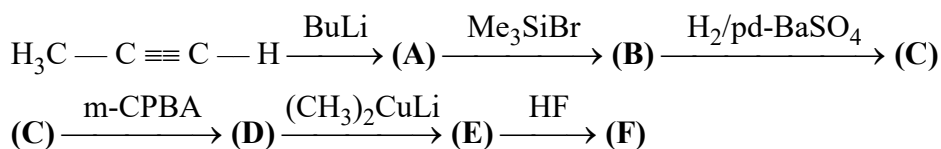


- (B) Give synthesis and reactions of pyrrole and quinoline. 7

5. (A) Complete the reaction with its mechanism 7



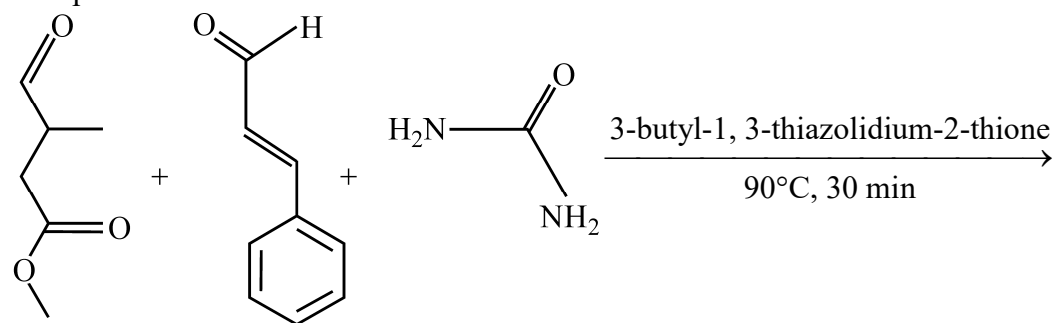
- (B) Complete the following reaction : 7



6. (A) Discuss the synthesis of pyridine and reactions of isoxazole. 7

- (B) Explain photosensitization and principle of energy transfer. 7

7. (A) Complete the reaction with its mechanism 7



- (B) Define phase transfer catalysis and synthetic uses of crown ethers. 7

8. (A) Give two syntheses of triazole, indolizine and isothiazole. 7

- (B) Discuss di- π methane and photo-Fries rearrangement. 7

Section – II

1. What is bioluminescence ? 1
2. Give Paterno-Buchi reaction. 1
3. State two examples of heterocyclic compounds in medicinal chemistry. 1
4. Give nitration of thiazole. 1
5. Give merits and demerits of Shapiro reaction. 1
6. What do you mean by transmetallation ? 1
7. Give two applications of DCC. 1
8. Define Umpolung. 1