

M.Sc.(Chem.) Semester - 2 (CBCS) Examination
May/June-2022 (NEW COURSE)
Organic Chemistry (CORE)

Time: 2:30 Hours

Marks: 70

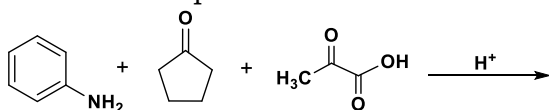
Instructions:

1. All questions are compulsory.
2. Figures to the right indicate marks.

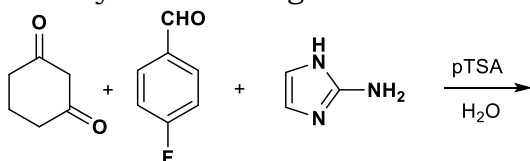
Q.1 (a) Answer the following

04

- (1) What are multicomponent reactions (MCR)? Identify the following reaction and write its product.

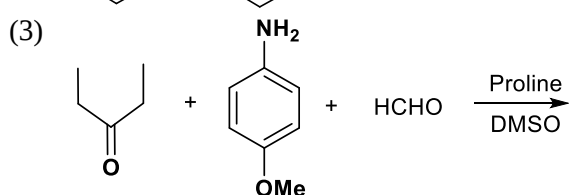
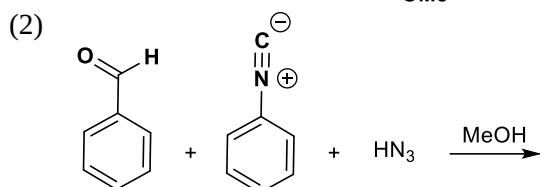
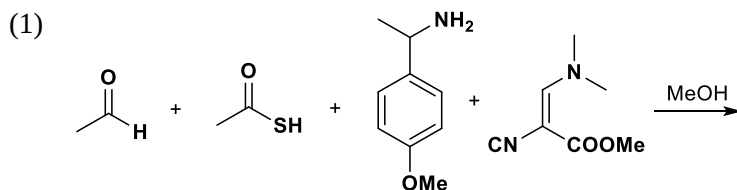


- (2) Identify the following reaction and write its product.

**Q.1 (b) Answer any two question out of three.**

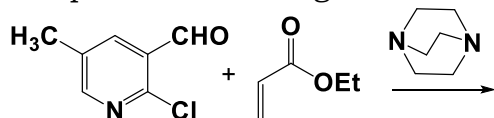
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Identify the following reaction, and write corresponding products with detailed mechanism:

**Q.2 (a) Answer the following**

04

- (1) What is organocatalysis? Give one example of organocatalyzed Aldol reaction with mechanism.
- (2) Complete the following reaction sequence with mechanism:

**Q.2 (b) Answer any two question out of three.**

10

Describe principle, mechanism and three applications of following reaction:

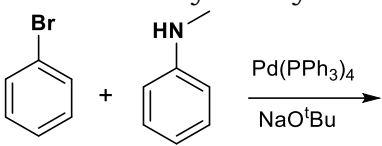
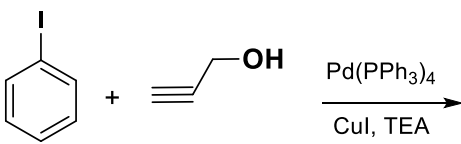
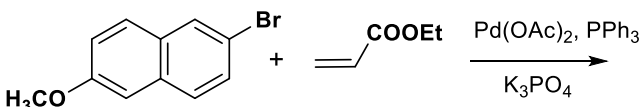
- (1) Simon-Smith cyclopropanation
- (2) Peterson olefination
- (3) Horner-Wadsworth-Emmons (HWE) reaction

Q.3 (a) Answer the following**04**

- Write the structure of following:
a. (BINAP)PdCl₂ b. (DPPF)PdCl₂
- Discuss transmetalation and isomerization with suitable example

Q.3 (b) Answer any two question out of three.**10**

Identify the following reaction, and write corresponding products with detailed catalytic cycle:

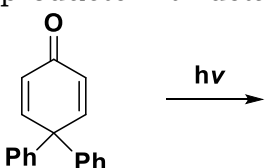
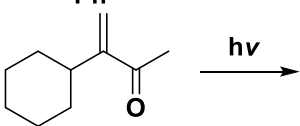
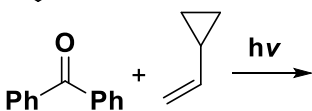
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Q.4 (a) Answer the following**04**

- Discuss the following:
(a) Quantum yield (b) Stark-Einstein law
- Explain trapping experiment for free radical with suitable example

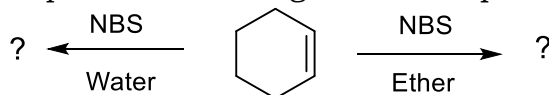
Q.4 (b) Answer any two question out of three.**10**

Identify the following photochemical reaction, and write corresponding products with detailed mechanism:

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Q.5 (a) Answer the following**04**

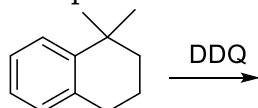
- Complete the following reaction sequence.



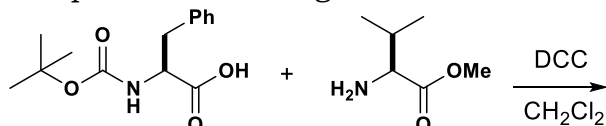
- Write the structure of following: (a) TBTH (b) AIBN

Q.5 (b) Answer any two question out of three.**10**

- Complete the following reaction with detailed mechanism:



- Complete the following reaction with detailed mechanism:



- Write a note on Phase transfer catalyst TBAB
