

M.Sc.(Chem.) Semester - 2 (CBCS) Examination
May/June-2021 (NEW COURSE)
Organic Chemistry (CORE)

Time: 1:30 Hours

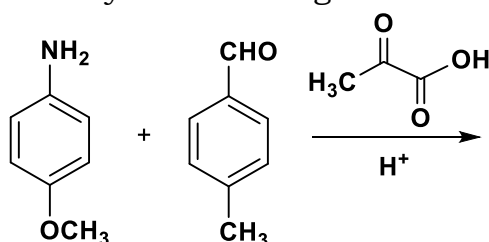
Marks: 42

Instructions:

1. Figure to the right indicate marks.
2. There are five questions in the question paper.
3. Answer any three of the following questions.

UNIT-1 (14 marks)Answer ALL questions**Q.1 (a) Answer the following** **4 Marks**

- (1) What are multicomponent reactions (MCR)? Write its advantages. 2
- (2) Identify the following reaction and write its product. 2

**Q.1 (b) Answer any two question out of three.** **10 Marks**

Describe principle, mechanism and three applications of the following MCR:

- (1) Ugi reaction 5
- (2) Biginelli reaction 5
- (3) Mannich reaction 5

UNIT-2 (14 marks)Answer ALL questions**Q.2 (a) Answer the following** **4 Marks**

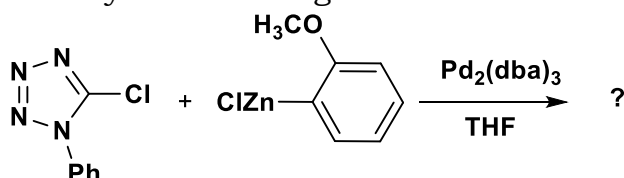
- (1) What is organocatalyst? Give three examples. 2
- (2) Describe organocatalyzed aldol reaction with one example. 2

Q.2 (b) Answer any two question out of three. **10 Marks**

- (1) What is Conjugate addition reaction? Describe various factors affecting conjugate and direct addition reaction with example. 5
- (2) Describe Horner-wadsworth-emmons (HWE) reaction in detail. 5
- (3) Write a note on peterson olefination. 5

UNIT-3 (14 marks)Answer ALL questions**Q.3 (a) Answer the following** **4 Marks**

- (1) Write any four structure of Pd⁽⁰⁾ complexes which are utilized in the C-C cross coupling reaction. 2
- (2) Identify the following reactions and write it's appropriate product. 2

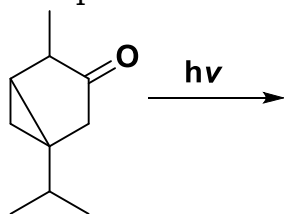


Q.3 (b) Answer any two question out of three.	10 Marks
Describe principle, mechanism and two applications of the following Pd-catalyzed reactions:	
(1) Suzuki	5
(2) Heck	5
(3) Sonogashira	5

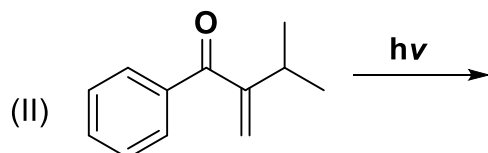
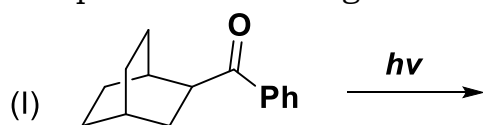
UNIT-4 (14 marks)
Answer ALL questions

Q.4 (a) Answer the following	4 Marks
(1) Explain:	
(i) Grothurs-draper law	2
(ii) Stark-Einstein law	
(2) Explain Norish type-II cleavages with example.	2

Q.4 (b) Answer any two question out of three.	10 Marks
(1) Explain Jablonski diagram in detail.	5
(2) Complete the following reactions with mechanism:	



(3) Complete the following reactions (I & II) with mechanism.



UNIT-5 (14 marks)
Answer ALL questions

Q.5 (a) Answer the following	4 Marks
(1) Write the chemical structure of the following reagent:	
(i) AIBN (ii) TMSCN	2
(2) Write structure and two application of NBS.	2

Q.5 (b) Answer any two question out of three.	10 Marks
Write chemical structure and at least four applications of following reagent:	
(1) TEMPO	5
(2) TBAB	5
(3) DDQ	5
