

M.Sc.(Chem.) Semester - 2 (CBCS) Examination
March/April – 2026 (As Per Syllabus Year-2018)
Organic Chemistry (CORE)

Time: 2:30 Hours

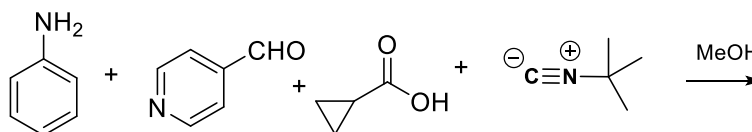
Marks:70

Instructions:

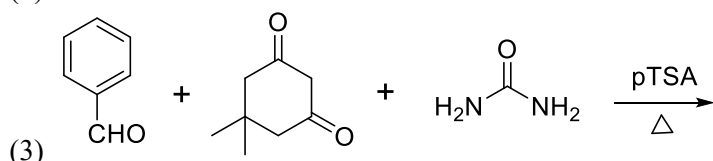
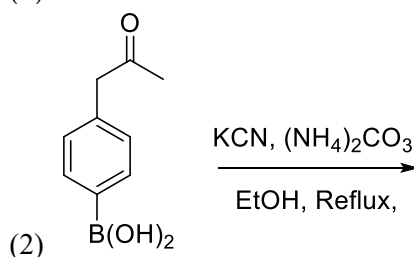
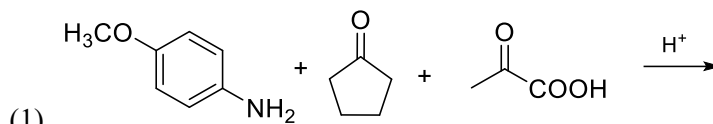
1. All questions are compulsory.
2. Figures to the right indicate marks.

Q.1 (A) Answer the following (04)

- (1) Complete the following reaction and discuss its mechanism.

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

Write the product of the following reaction and explain the mechanism:

**Q.2 (A) Answer the following (04)**

- (1) Explain one example of successive [1,4] conjugate addition reaction with example.
- (2) Discuss structural factors affecting the conjugative addition with examples.

Q.2 (B) Answer any two question out of three. (10)

Explain principle, mechanism and three applications of following:

- (1) Wittig olefination reaction
- (2) Horner-Wadsworth-Emmons (HWE) reaction.
- (3) Simmon-Smith cyclopropanation reaction

Q.3 (A) Answer the following (04)

- (1) Give any four structure of Pd(0) catalysts.

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

Write appropriate product for the following reaction and explain its catalytical cycle:

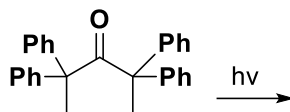
- (1) Negashi reaction
- (2) Stille reaction
- (3) Kumada reaction

Q.4 (A) Answer the following (04)

- (1) Draw Jablonski diagram and explain briefly.

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

- (1) Discuss any one example of intramolecular Paterno-Buchi reaction with mechanism
- (2) Write Primary and Secondary photochemical process for the following reaction:



- (3) Give an example of Norrish type-II cleavage and explain its mechanism.

Q.5 (A) Answer the following (04)

- (1) Give the structure and synthesis of TEMPO.

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

Describe chemical structure, mechanism and at least three applications of following reagent:

- (1) NBS
- (2) AIBN
- (3) DDQ
