

M.Sc. Examination 2019

Semester-IV

Chemistry

Optional Course: CH-1022

(Organic Chemistry)

Time: Three Hours

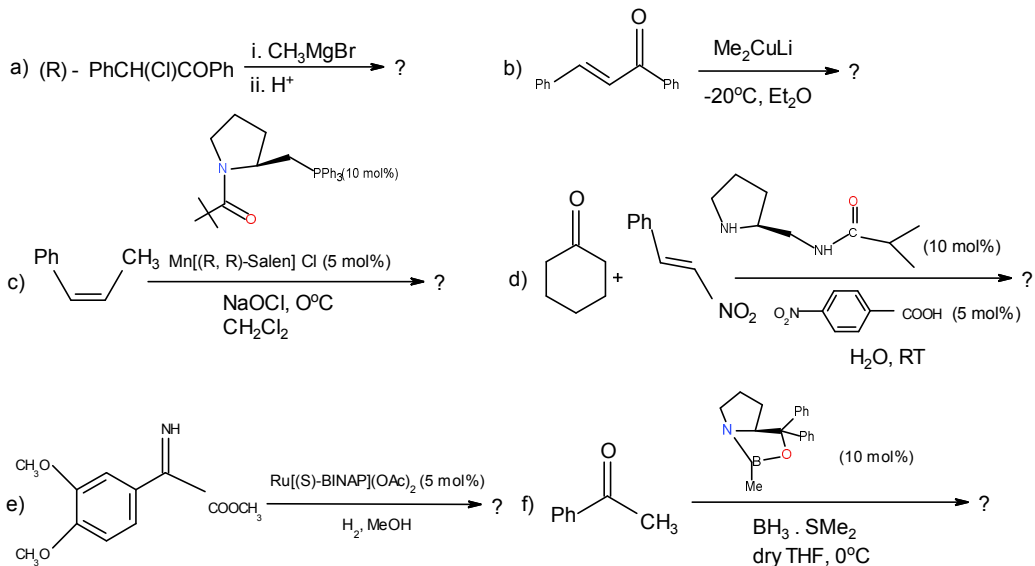
Full Marks: 40

Questions are of value as indicated in the margin.

Answer **two** questions from **Question No. 1-3** and **two** questions from **Question No. 4-6**.

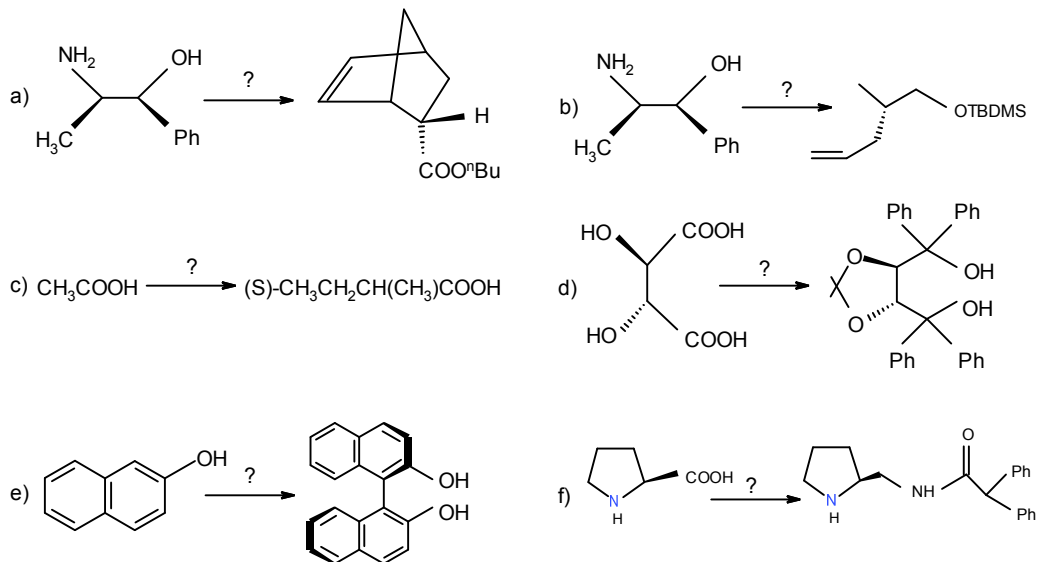
1. Identify the product(s) with plausible mechanism (**any four**):

2.5x4



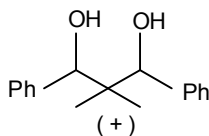
2. How can you carry out the following conversions? (**any four**)

2.5x4



3. a) How can you resolve the following 1,3-diol?

2.5



P.T.O.

- b) Discuss the advantages and disadvantages of asymmetric organocatalysis in aqueous media. 4
- c) What is the therapeutic use of (S)-Dexfenfluramine? 1
- d) Briefly describe the strategies for the sustainable asymmetric organocatalysis. 2.5
4. a) What do you mean by synergistic agent? Name two synergistic agents for penicillin. Propose a mechanism for inactivation of β -lactamases by those agents. 2+2+4
- b) Explain how β -lactam ring of penicillin interact with bacterial cell wall to inhibit the cell wall biosynthesis. 2
5. a) What is prodrug? How these prodrugs accelerate the activity of penicillin. Explain with a suitable example. 5
- b) 6-APA is the key semisynthetic compound to synthesize different prodrugs of penicillin. How 6-APA can be synthesized from Penicillin G? 3
- c) Write the structure of Methicillin and Cloxacillin. 2
6. a) Briefly describe the following category of cardiovascular drugs:
i) anti anginal
ii) anti arrhythmics
iii) anti hypertensive
iv) anti coagulant 1+1+1+1
- b) Write short notes on (*any three*): 3x2
i) Sorbitrate
ii) Diltiazem
iii) Verapamil
iv) Methyl dopa
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