647510 **MSC4OrgC401x** **Seat No :_____**

M.Sc.(Chem.) Semester - 4 (*CBCS*) Examination
March/April - 2026 (As Per Syllabus Year June-2019)
Organic Synthesis: A Disconnection Approach (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 is retrosynthesis? Discuss various criteria for good disconnection analysis.

(2) What is synthon? Explain with one example

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

Discuss disconnection analysis and proposed synthesis of following commercial product:

(1) Ibuprofen

(2) Dettol

(3) Musk ambrette

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

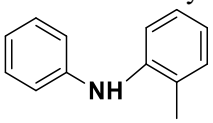
(1) Explain retrosynthesis of 1,5 di-carbonyl compound with suitable example.

(2) Discuss two group C-X disconnection strategy with suitable example.

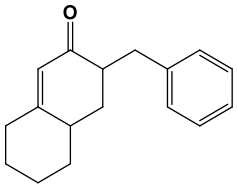
Q.2(B) **Answer any two question out of three.** **(10)**

Discuss disconnection analysis and proposed synthesis of following TM:

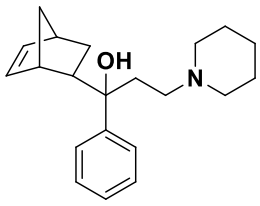
(1)



(2)



(3)



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

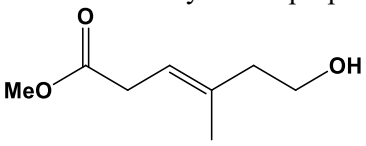
(1) What is umpolung reagent ? Give two examples.

(2) How will you disconnect 1,2-diol compound? Explain with suitable example.

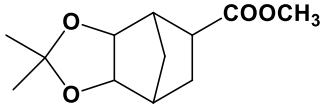
Q.3(B) **Answer any two question out of three.** **(10)**

Discuss disconnection analysis and proposed synthesis of following TM:

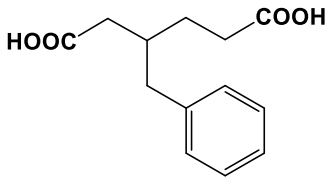
(1)



(2)



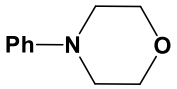
(3)



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

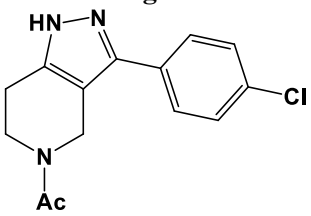
(1) How will you disconnect epoxide ring ? Explain with suitable example.

(2) Discuss two disconnection strategies for following TM:

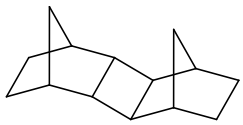


Q.4(B) Answer the following **(10)**

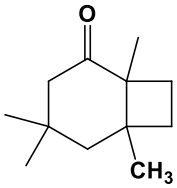
(1)



(2)



(3)



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

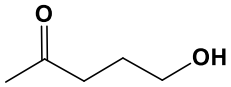
(1) What are protecting groups? Give characteristics for ideal protecting group.

(2) What is chemo selectivity? Give one example.

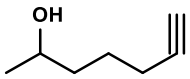
Q.5(B) Answer the following **(10)**

(1) Describe various protecting and deprotecting strategies for -NH_2 groups with examples.

(2) Discuss disconnection strategy and proposed synthesis of following TM:



(1) Discuss disconnection strategy and proposed synthesis of following TM:



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