

M.Sc.(Chem.) Semester - 4 (CBCS) Examination

April/May-2023 (NEW COURSE)

Organic Synthesis: A Disconnection Approach (Core)

Time: 2:30 Hours

Marks: 70

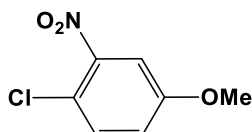
Instructions:

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

Q.1(A) Answer the following questions.

(04)

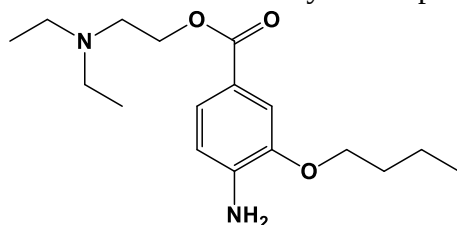
1. What is retrosynthesis? Why it is important? Explain with example.
2. What is order of event strategy? Give disconnection analysis of following TM:



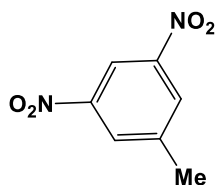
Q.1(B) Answer the following question. (Any Two)

(10)

1. Discuss FGI and FGR disconnection strategy with one example of each.
2. Write disconnection analysis and propose synthetic route for following TM:



3. Apply dummy group strategy to disconnect following TM and also propose its synthetic route:



Q.2(A) Answer the following questions.

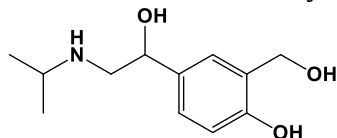
(04)

1. Explain disconnection strategy for 1°, 2° and 3° alcohol with example.
2. Explain two group disconnection strategy with two examples.

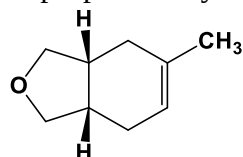
Q.2(B) Answer the following question. (Any Two)

(10)

1. Discuss disconnection strategy for 1, 3 & 1, 5 diketones with one example of each.
2. Write disconnection analysis and propose synthetic route for following TM:



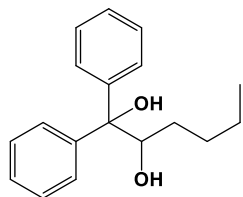
3. Apply C-X & C-C group disconnection strategy to disconnect following TM and propose its synthetic route:



Q.3(A) Answer the following questions.

(04)

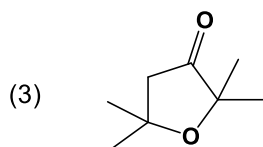
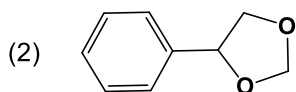
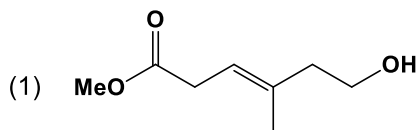
1. What is reversal of polarity? Explain umpolung synthon and reagent.
2. Describe disconnection strategy for following TM:



Q.3(B) Answer the following question. (Any Two)

(10)

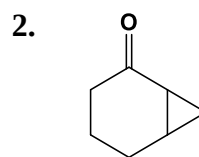
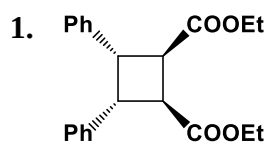
Apply the umpolung disconnection strategy for following TM and propose synthesis:



Q.4(A) Answer the following questions.

(04)

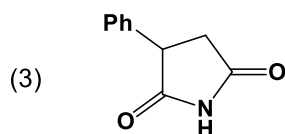
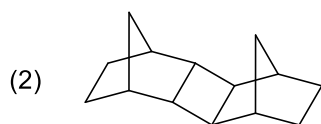
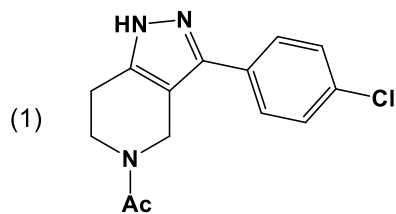
Discuss disconnection analysis and proposed synthesis of following TM:



Q.4(B) Answer the following question. (Any Two)

(10)

Explain the disconnection strategy for following TM and propose synthesis:



Q.5(A) Answer the following questions.

(04)

1. Discuss protection and deprotection strategy for following groups:

I. R-NH₂

II. R-OH

III. R-CHO

IV. R-COOH

Q.5(B) Answer the following question. (Any Two)

(10)

Explain the disconnection strategy for following TM and propose synthesis:

