Enrollment No:	Exam Seat No:

C.U.SHAH UNIVERSITY

Winter Examination-2015

Subject Name: Disconnection Approach

Subject Code: 5SC03CHC1 Branch: M.Sc. (Chemistry)

Semester :3 **Date :** 01/12/2015 **Time :**2:30 To 5:30 **Marks :**70

Instructions:

- (1) Use of Programmable calculator and any other electronic instrument is prohibited.
- (2) Instructions written on main answer book are strictly to be obeyed.
- (3) Draw neat diagrams and figures (if necessary) at right places.
- (4) Assume suitable data if needed.

Meyer's base.

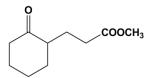
Do the disconnection and plan the synthesis.

SECTION - I

Q-1 **Attempt the Following questions** (07)What is retrosynthesis analysis? **(1) b.** Define functional group interconversion. **(1) c.** What is synthon and synthetic equivalent in disconnection approach? **(1) d.** What are the reagents used for chlorosulphonation of aromatic compounds? **(1)** What are the synthons obtained by disconnection of 1,3-dicarbonyl compounds? **(1)** Draw reaction scheme for synthesis of mannich base. f. **(1)** Write the synthetic equivalent for synthesis of β -hydroxy carbonyl compounds. **(1)** Q-2 Attempt all questions (14)a. What strategy should be followed for adding two o,p-directing group; meta to **(5)** each other on the aromatic ring? Explain by giving suitable example. **b.** Explain with suitable example, the utility of Witting reaction in organic synthesis. **(5)** The following compound is an antihistamine drug. Disconnect the molecule and **(4)** plan the synthesis. OR 0-2Attempt all questions (14)**a.** What is Ritter reaction? Explain the application of Ritter reaction in synthesizing **(5)**

b. How Mannich base formation can be useful in synthesizing following molecule?

(5)



c. Write the structure of amine required for the synthesis of coccinelline; the defense compound ladybird exude from their knees. The structure of coccinelline is drawn below. Do the disconnection and plan the synthesis of amine.

(4)

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- Q-3 Attempt all questions (14)
 - **a.** Do the disconnection and plan the synthesis. (7)

b. Do the disconnection and plan the synthesis. (7)

- Q-3 a. Do the disconnection and plan the synthesis. (7)
 - **b.** Do the disconnection and plan the synthesis. (7)

$$O_2N$$
 O_2N
 O_2N

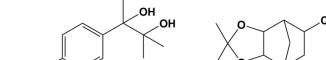
SECTION - II

- Q-4 Attempt the Following questions (07)
 - a. What reactants are used for synthesis of α -hydroxy ketone? (1)
 - **b.** Draw reaction scheme of benzoin condendation. (1)
 - **c.** How can 1,2-diol be synthesized from alkene? (1)

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(1) What are the basic requirements of a good protecting group? Write the name and structure of groups for protection of alcohol functionality. **(1)** What reagents are used for urethanes protection and deprotection of amine group? f. **(1)** Which reagents can react with acetal protected aldehyde group? **(1)** Q-5 **Attempt all questions** (14)a. Explain the application of protecting groups in dipeptide synthesis of ester of **(5)** Asp-Phe-OCH₃? **b.** Do the disconnection and plan the synthesis. **(5) c.** Do the disconnection and plan the synthesis. **(4)** NO₂ OR Q-5 Write a note on deprotection of different types of ester. **(5)** Do the disconnection and plan the synthesis. **(5)** OH ÓCH₂Ph Do the disconnection and plan the synthesis. **(4)** Attempt all questions (14)**Q-6 a.** Do the disconnection and plan the synthesis. **(7)** COOEt OH



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(7)

Q-6 Attempt all Questions

a. Do the disconnection and plan the synthesis. (7)

Ph H₃COOC H₃OCH₃

b. Grandisol (structure shown below) can be synthesized by the cyclohexenone intermediate. What is the structure of cyclohexenone intermediate? Disconnect all possible intermediates and plan the synthesis. (7)

