No. of Printed Pages: 3

SARDAR PATEL UNIVERSITY

M.Sc. Semester-III: Organic Chemistry Examination (CBCS)

October-2018, Date: 25.10.2018

Thursday, Time: 2.00 p.m. to 5.00 p.m.

Paper code: PS03CORC22, Subject: Disconnection approach

Total marks: 70 N.B.: i) Figure to the right indicate marks. ii) Assume the suitable data if necessary and indicate clearly. Q.1. Attempt MCQs with correct answer highlighted [80] Synthetic equivalent(s) suitable for synthon 'H-' will be a) NaBH₄ b) LiALH₄ Both a) and b) c) **d)** HX ii) Identify correct structure of the product b) iii) A disconnection that leads to logical synthon(s) only a) 1,3-diCO b) 1,6-diCO c) 1,4-diCO d) None iv) Identify correct structure of the product v) Epimerization will be promoted by H₂O₂/Base - 1 b) NH₂OHHC1 c) NaOH/EtOH d) All vi) A reagent suitable for synthon 'CH2-' a) Sulfur ylide b) CH_2Cl_2 c) PhCH₂ONa d) CH₃CH₂OLi Partial charge to carbon assigned correctly in the structure viii) Which of the following is Pearlman's catalyst? a) H₂, Pt/C b) Ca(OH)₂/C Pd(OH)2/C c) Pd/C Q.2. Answer any <u>Seven</u> i) State the term activation with suitable example [14] Do the disconnection and synthesis plan of TM below

- iii) Give significance and use of Diels-Alder reaction in synthesis
- v) Identify strategies A and B, and synthon C below

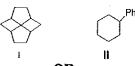
- v) Sate 'ylide'. Give synthesis of styrene oxide using sulfur ylide
- vi) RCH₂⁺ is best described for disconnection of PhOCH₂R, but not for PhNHCH₂R! Explain
- vii) Describe in brief protection and deprotection of amino group with suitable examples
- viii) State various classical methods for ester formation
- ix) How will you discornect and construct 1,3-dicarbonyl compound? State the strategy
- Q.3. a) Give methods for preparation of olefins. Show disconnection [06] and synthesis design of TMs below

b) Give significance of Friedel-Craft reaction. Do disconnection [06] and synthesis of TMs below

OR

b) State disconnection strategy for acid R-COOH, in general. Give disconnection and synthesis strategies of TM below.

- Q.4 a) State with mechanism, Benzoin condensation, acyloin [06] synthesis and Mannich reaction, along with their uses in synthesis
 - b) State the term FGA. Give synthesis design of TMs below [06]



OR

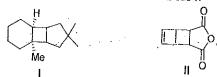
b) Do the disconnection and synthesis plan of TMs below

Q.5. a) Name the reagents used to reduce oxime. Disconnect and [06 design following TMs

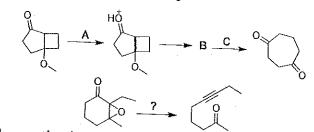
b) Name suitable reagent known for synthon 'ö'. Design synthesis of TMs below



b) How will you construct four member ring? Show the strategy [06] in general. Design structures shown below



Q.6 a) Complete with reaction conditions, and mechanism of [06] i)



b) Give the synthesis of molecules given below
HO₂C [06]

OR

b) Attempt following

ii)

- i) Describe strategy to protect and de-protect alcohol, suggesting at least three different ways
- ii) Complete the following with structures A, B, and C identified