Exam.Code:0432
Sub. Code: 2957

1056

M.Sc. (Applied Chemistry/Pharmaceutical) Second Semester

Paper-201: Organic Chemistry – I

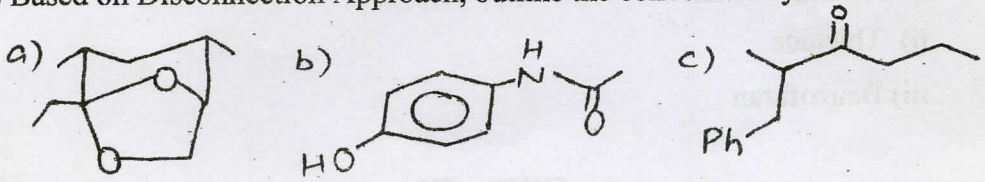
Time allowed: 3 Hours Max. Marks: 80

NOTE: *Attempt five questions in all, including Question No. IX (Unit-V) which is compulsory and selecting one question each from Unit I -IV*

x-x-x

UNIT – I

I. a) Based on Disconnection Approach, outline the convenient synthesis of:-



b) What do you mean by the term regioselectivity. Discuss in terms of Micheal reaction. (9,7)

II. a) Define the following:-

i) Synthon

ii) FGI

iii) Rational and Irrational Synthesis

b) Discuss chemoselectivity in detail. (9,7)

UNIT – II

III. a) Explain the frontier molecular orbital method for analyzing an electrocyclic reaction by taking one example. Derive the selection rule for the electrocyclic reaction.

b) Discuss cope rearrangement in detail.

c) What is a pericyclic reaction. (8,6,2)

IV. a) Draw correlation diagram for [2+2] cycloaddition reaction and explain whether it is thermally/photochemically allowed.

b) Discuss claisen rearrangement in detail.

c) What is eve reaction? (8,6,2)

UNIT – III

V. a) Give the synthesis of:-

i) Aziridine

ii) Oxirane

iii) Thiirane

iv) Oxetane

b) Explain why?

i) Oxirane has a higher dipole moment than thiirane.

ii) Ring opening of oxetane by nucleophites is slower than that of oxirane. (12,4)

P.T.O.

VI. a) i) Furan is least aromatic in comparison to pyrolle and thiophene.

ii) Why electrophilic attack in thiophene takes place at 2-and not 3-position.

iii) Discuss and compare the electrophilic substitution reaction of indole, benzofuran and benzothiophene.

b) Give the synthesis of:-

i) Beuzopyrolle

ii) Thietane

iii) Beuzofuran (8,8)

UNIT – IV

VII. a) How will you use some compounds of Boron to bring about anti-markownikoff cis hydration of alkene?

b) What are higher order on peotes.

c) Write Heck reaction. (16)

VIII. a) With appropriate examples describe the use of organometallic compounds derived from Si, Cd & Zn inorganic synthesis.

b) What is the role of enolates in synthesis? How can we get kinetically and thermodynamically stabilized enolates? (8,8)

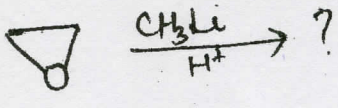
UNIT – V

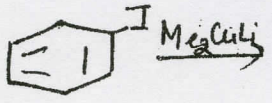
IX. Attempt the following:-

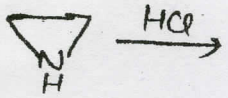
a) Draw HOMO-LUMO of butadiene

b) Write Reformatsky reaction

c) What is convergent synthesis?

d) 

e) 

f) 

g) RMgx + R'-C≡N ?

h) Peterson reaction (8x2)

x-x-x