2020

B.Sc

4TH SEMESTER EXAMINATION

CHEMISTRY (HONOURS)

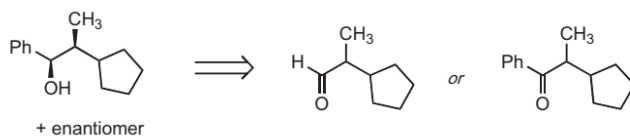PAPER – C10T (ORGANIC CHEMISTRY-IV)

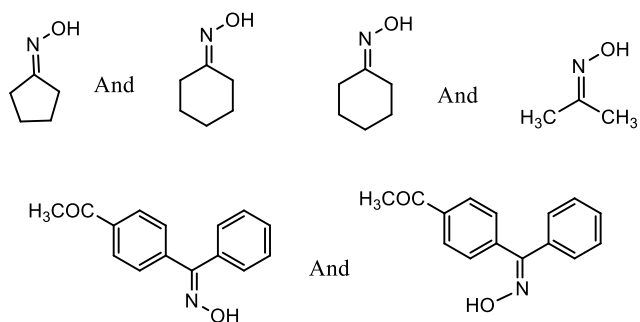FULL MARKS: 20   TIME- 2HRS

ANSWER ANY ONE FROM THE FOLLOWING

1. Describe the terms with suitable example
   a. Illogical electrophile, b. Illogical nucleophile. c. Synthon & Synthetic equivalent. d.Divergent and Convergent synthesis. e.Umpolung.

2. a. Which would be the appropriate starting material to synthesize the given target molecule with the stereochemistry shown? Explain.
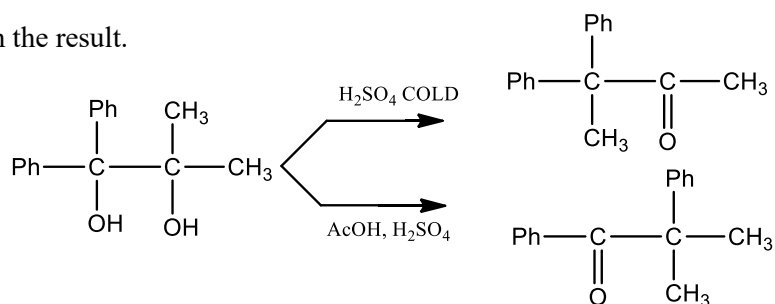

b. Explain the following:
   (i) Effect of increasing solvent polarity on n →π*, n →σ* and π →π* transitions.

   (ii) Transition probability.

3. a. How will you distinguish o-hydroxybenzaldehyde (salicylaldehyde) and m-hydroxybenzaldehyde on the basis of IR spectroscopy?

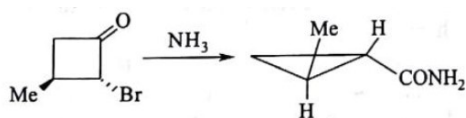b. Explain why Vc=O frequency for m-chlorobenzoic acid is higher than that for p-chlorobenzoic acid?

4. Which compound of the following pair will undergo Beckmann rearrangement more radily? Explain with proper reason.

cyclopentanone oxime **And** cyclohexanone oxime

cyclohexanone oxime **And** H_3C—C(=NOH)—CH_3 (acetone oxime)

H_3COC—(benzene ring)—C(=N-OH)(Ph) **And** H_3COC—(benzene ring)—C(=N-OH)(Ph) with HO-N

5. a. Explain the result.

Ph—C(Ph)(OH)—C(CH_3)(OH)—CH_3

$\xrightarrow{H_2SO_4 \text{ COLD}}$ Ph—C(Ph)(CH_3)—C(=O)—CH_3

$\xrightarrow{AcOH, H_2SO_4}$ Ph—C(=O)—C(Ph)(CH_3)—CH_3

b. Predict the mechanistic pathway of the transformation comment on the stereochemistry of conversion.

$\xrightarrow{NH_3}$ Me H ... CONH_2 ... H

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CHEMISTRY (HONOURS)

PAPER – **C10P** (ORGANIC CHEMISTRY-IV)

FULL MARKS: 10   TIME- 2HRS

ANSWER ANY ONE FROM THE FOLLOWING

1. Write down the principle of Estimation of glycine by Sörensen's formol method.

2. Write down the principle of Estimation of glucose by titration using Fehling's solution.

3. Write down the principle of Estimation of sucrose by titration using Fehling's solution.

4. Write down the principle of Estimation of formaldehyde (Formalin).

Send answer script to this mail.   cc10hons@gmail.com