Sr. No. 3343

Exam Code:103206

Subject Code: 7556

B.A/B.Sc. - 6th Semester (old sylb 2019-20)

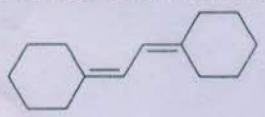
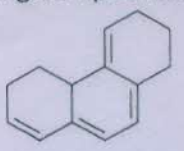
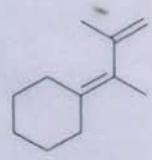
(2721)

Paper: Chemistry (Organic Chemistry-A)

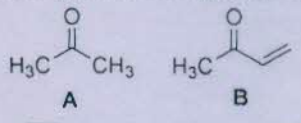
Time Allowed: 2 hrs. **Max. Marks: 35**

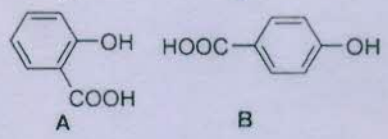
Note: There are EIGHT questions of equal marks. Candidates are required to attempt any FOUR questions.

1. (a) Discuss the role of solvent polarity on n-π^* and π-π^* transitions.
(b) Calculate λmax in UV spectrum of the following compounds:

(A)  (B)  (C) 

2. (a) How will you distinguish the following pairs using IR spectroscopy:

(I) 

(II) 

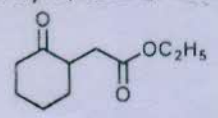
(b) Draw the structure of three isomeric dimethylcyclopropanes. How many NMR signals do you expect to get from each?

3. (a) An Organic Compound with molecular formula $C_{10}H_{14}$ showed the following NMR data: δ 1.8 (d, 6H); 2.45 (d, 2H); 2.86 (m, 1H); 7.30 (m, 5H). Deduce the structure of compound with proper explanation.
(b) Describe in detail the synthesis of sulfaguanidine.

4. (a) Using acetoacetic ester synthesis, discuss the synthesis of n-Valeric acid.
(b) Explain the synthesis of Epoxy resin and discuss its use.

5. (a) Discuss Ruff degradation for the conversion of aldohexose to aldopentose.
(b) Discuss Sanger's method for N-terminal residue analysis.

6. (a) Using Enamine synthesis, discuss the synthesis of following:



(b) Discuss Curtius reaction for the preparation of α-amino acids.

7. (a) How will you distinguish between cyclopentanone, cyclobutanone and cyclopropanone using IR spectroscopy?
(b) Draw the Haworth Projection formula for α-D-glucopyranose.
(c) What is a finger print region in IR spectroscopy?

8. (a) What do you mean by shielding and de-shielding of protons?
(b) How will you distinguish between *cis* and *trans*-1,3-pentadiene using U.V. Spectroscopy?
(c) Define isoelectric point of an amino acid.