THE AMERICAN COLLEGE, MADURAI

(An Autonomous Institution Affiliated to Madurai Kamaraj University)
Re-accredited (2nd Cycle) by NAAC with Grade "A", CGPA – 3.46 on a 4-point scale

Backlog Arrear Examination, March 2021

PGC 4422/4402 **ORGANIC CHEMISTRY-II** **Time: 3 Hours**
Max Marks: 75

Answer any FIVE Questions: **(5 X 15 = 75)**

1. Explain asymmetric synthesis with the help of Cram's and Prelog's rule.

2. a) Describe first order asymmetric transformation.
   b) Explain the resolution of racemic ketones.
   c) Write note on the conformation of perhydroanthracene.

3. Discuss in detail the structural elucidation of quinine.

4. a) Define resolution. Give one example each for chemical method and biochemical method. Give the limitaitons of the latter method.
   b) Explain the causes for optical activity in allenes, spiranes and hexahelicenes.

5. a) Briefly discuss the conformational analysis of
      (i) 1-methyl-1-phenyl cyclohexane
      (ii) cis-cyclohexane-1,3-diol
      (iii) trans-1,3-ditertiary butyl cyclohexane.
   b) Explain the conformations of decalins with structures.

6. a) What is Nuclear Overhauser Effect? How is it useful in determining the stereochemistry of organic compounds?
   b) Discuss the fragmentation pattern of a) $CH_3CH_2CH_2CH_2OH$
      b) $CH_3CH_2CONH_2$

7. Draw and explain the HOMCOR, DEPT and INADEQUATE spectra for 2-bromo butane.

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