



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 4408

BIOLOGICAL CHEMISTRY

75 MARKS

Time: 3 Hrs

(Answer any FIVE questions)

5X15 =75

1. a) Discuss the need for asymmetric synthesis of α - aminoacids.
b) Outline the methodology adopted by E.J. Corey for synthesis of D-alanine. (5+10)

2. a) Can antibodies act as enzymes? Substantiate your answer giving suitable examples.
b) Explain the term 'suicide enzyme inactivators'. Clavulanic acid is a suicide enzyme inactivator added to amoxicillin pharmacology- Explain. (6+9)

3. Compare the following:
a) Ferridoxins and rubridoxins.
b) Hc and Hr as non-heme oxygen carriers. (8+7)

4. a) What are transition state analogs? Explain its use in designing drugs.
b) Illustrate Proximity effect with suitable examples (7+8)

5. Discuss the following
a) Protein synthesis
b) DNA replication and mutation (9+6)

6. Write notes on:
a) Blue copper proteins
b) Cytochrome C-oxidase. (8+7)

7. Illustrate the importance of metals in nutrition and medicine. (7+8)