



# THE AMERICAN COLLEGE, MADURAI

(An Autonomous Institution Affiliated to Madurai Kamaraj University)

Re-accredited (2<sup>nd</sup> Cycle) by NAAC with Grade "A", CGPA – 3.46 on a 4-point scale

## Backlog Arrear Examination, March 2021

**BOT 3533**  
**Bionanotechnology and Bioinformatics**

**Max: 75marks**

**Time: 3hrs**

**I. Answer any FIVE of the following each not exceeding four pages. (5x15=75)**

1. Show how bottom-up and top-down approaches aid in developing nanostructures.
2. Write the principle and working mechanism of Atomic force microscope.
3. Find the utility of MALDI-TOF in bionanotechnology.
4. Enlist the applications of bionanotechnology in the field of molecular diagnostics and therapeutics.
5. Give an account on DNA and protein databases and show how one can retrieve sequences from NCBI.
6. What is phylogenetic classification and find how cladistics is used in generating phylogenetic trees.
7. With illustrations describe the working mechanism of cryoelectron microscope.