

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI – 600 086
(For Candidates admitted during the academic year 2019 – 2020 & thereafter)

B.Sc. DEGREE EXAMINATION - NOVEMBER 2024
BRANCH VI A – ADVANCED ZOOLOGY & BIOTECHNOLOGY
FIFTH SEMESTER

COURSE : MAJOR CORE
PAPER : FUNDAMENTALS OF BIOTECHNOLOGY
SUBJECT CODE : 19ZL/MC/FB54
TIME : 3 HOURS **MAX. MARKS: 100**

SECTION – A

ANSWER ALL QUESTIONS: (10 x 3 = 30)

1. Mention any three objectives of the Human Genome Project.
2. Comment on the Particle -Bombardment Gun.
3. Give any three applications of Western blotting.
4. Differentiate between clear and turbid plaque.
5. Distinguish inactivated vaccines from live attenuated vaccines.
6. Mention any three applications of ELISA.
7. Comment on IPR with reference to the Life Sciences.
8. Mention the functions of Restriction Enzymes.
9. Enumerate any three Data retrieval tools used in Bioinformatics.
10. Define the following:
 - a. Transgenic
 - b. Passenger DNA
 - c. Electroporation

SECTION – B

ANSWER ANY FIVE QUESTIONS: (5 x 6 = 30)

11. Explain the working mechanism of PCR technique.
12. Outline the steps in Genetic engineering.
13. Discuss the applications of stem cell culture.
14. Explain the steps involved in the production of industrial enzymes.
15. Elaborate on Site - directed mutagenesis.
16. Summarise the Sanger method of DNA Sequencing.
17. Analyse the ethical issues relating to Genetically Modified Organisms.

SECTION – C

ANSWER ANY TWO QUESTIONS: (2 x 20 = 40)

18. Discuss the role of gene cloning in medicine.
19. Discuss in detail the mechanism of Cloning in Prokaryotes.
20. Explain the use of Proteomics as a branch of Bioinformatics.
21. Give a detailed account on animal cell and tissue culture techniques and discuss its merits and demerits.
