

**STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI – 600 086**  
**(For Candidates admitted during the academic year 2015 – 2016)**

**SUBJECT CODE: 15ZL/MC/FB54**

**B.Sc. DEGREE EXAMINATION - NOVEMBER 2017**  
**BRANCH VI A – ADVANCED ZOOLOGY & BIOTECHNOLOGY**  
**FIFTH SEMESTER**

**COURSE : MAJOR CORE**  
**PAPER : FUNDAMENTALS OF BIOTECHNOLOGY**  
**TIME : 3 HOURS** **MAX. MARKS: 100**

**SECTION – A**

**ANSWER ALL QUESTIONS:** **(10 x 3 = 30)**

1. Comment on Genetic Engineering.
2. Write a note on Gene Bank.
3. Define mutagenesis.
4. Comment on liposome.
5. What are live attenuated vaccines?
6. Mention the applications of gene therapy.
7. What is called a DNA probe?
8. What are cloning vectors?
9. Differentiate generalized database from specialised database.
10. What are immobilised enzymes?

**SECTION – B**

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

11. Explain any two methods of Enzyme Immobilisation.
12. Briefly explain the three major cyclic reactions of PCR.
13. Write short notes on cloning in prokaryotes.
14. Briefly analyse the pros and cons of DNA fingerprinting technology.
15. Enumerate points on the ethical issues of Genetically Modified Organisms.
16. Briefly explain passenger DNA and cDNA.
17. Enumerate the applications of stem cell culture.

**SECTION – C**

**ANSWER ANY TWO QUESTIONS:**

**(2 x 20 = 40)**

18. Write a note on the following:

- a) Electrophoresis
- b) Northern Blot
- c) Southern Blot
- d) Western Blot

19. Discuss in detail the methods of transfer of foreign DNA into cells.

20. Write an essay on animal cell and tissue culture techniques and discuss its merits and demerits.

21. Write an account on the following:

- a) Site-directed mutagenesis.
- b) ELISA
- c) Monoclonal antibody production.
- d) Proteomics and genomics.

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