

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI – 600 086
(For Candidates admitted during the academic year 2008 – 09 & thereafter)

SUBJECT CODE: ZL/MC/GG54

B.Sc. DEGREE EXAMINATION NOVEMBER 2011
BRANCH VI A – ADVANCED ZOOLOGY & BIOTECHNOLOGY
FIFTH SEMESTER

COURSE : MAJOR CORE
PAPER : GENETIC ENGINEERING
TIME : 3 HOURS

MAX. MARKS: 100

SECTION – A

ANSWER ALL QUESTIONS

(10 x 3 = 30)

1. Choose the correct answer:
 - (i) Non essential DNA is
 - a) stuffer DNA
 - b) cDNA
 - c) rDNA
 - d) DNA probe
 - (ii) DNA is made from mRNA with the help of the enzyme
 - a) Ligase
 - b) Reverse transcriptase
 - c) RNA polymerase
 - d) Alkaline phosphatase
 - (iii) Taq DNA polymerase is isolated
 - a) *E.Coli*
 - b) *Streptomyces albus*
 - c) *Thermus aquaticus*
 - d) *Salmonella typhi*
2. Expand the following
 - a) EST
 - b) RAPD
 - c) RFLP
3. Why is *Agrobacterium tumefaciens* called as nature's genetic engineer?
4. Comment on DNA probe.
5. List the applications of interferons
6. What are advantages of DNA vaccines?
7. Name any three restriction enzymes and their sources.
8. Mention the applications of the following
 - a) PCR
 - b) IVF
 - c) Particle gun
9. What is patenting?
10. What is meant Xenotransplantation?

SECTION – B

ANSWER ANY FIVE QUESTIONS

(5 x 6 = 30)

11. Give a brief account of Restriction endonucleases
12. Explain DNA finger printing technique
13. Give an account of electroporation as a method of gene transfer
14. Briefly discuss the types of recombinant vaccines
15. Write a brief note on Human Genome Project.
16. Explain the different types of biological data bases
17. Are GM foods safe – Discuss.

SECTION – C

ANSWER ANY TWO QUESTIONS

(2 x 20 = 40)

18. Explain the role of cloning vectors in rDNA technology.
19. Outline the basic protocol involved in the production of monoclonal antibodies. Add a note on its application.
20. Highlight the Principles of genetic engineering and discuss its benefits and hazards.
21. Discuss the different methods to produce transgenic animals.
