

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI – 600 086
(For Candidates admitted during the academic year 2011 – 12)

SUBJECT CODE: 11ZL/MC/GN34

B.Sc. DEGREE EXAMINATION NOVEMBER 2012
BRANCH VI A – ADVANCED ZOOLOGY & BIOTECHNOLOGY
THIRD SEMESTER

COURSE : MAJOR CORE
PAPER : GENETICS
TIME : 3 HOURS

MAX. MARKS: 100

SECTION A

ANSWER ALL QUESTIONS

(10X3=30)

1. Define: A. Quantitative Inheritance B. Co-dominance.
2. Explain the kind of genic-interaction when a monohybrid phenotypic F₂ ratio is modified from 3:1 to 1: 2: 1.
3. Discuss the relevance of Barr body in sex determination.
4. A. The ----- technique was devised to detect mutation in Drosophila.
B. Change in the number of chromosomes is referred to as -----.
C. Change in the structure of chromosomes is referred to as -----.
5. What is Eugenics? Mention the types.
6. Differentiate between sex limited and sex influenced genes.
7. Write notes on Erythroblastosis Foetalis
8. Inheritance of 'little' phenotypes in yeast does not depend upon nuclear genes.-
Comment.
9. Highlight the role of proto-oncogenes in brief.
10. Chromosome mapping is influenced by the factors: 'interference' and 'coincidence'. –
Justify.

SECTION B

ANSWER ANY FIVE QUESTIONS

(5X6=30)

11. Write notes on Gynandromorphism.
12. What is epistasis ? Mention the types and explain anyone with a suitable example.
13. Explain Criss Cross Inheritance using a suitable example.
14. Discuss inheritance of blood grouping in man.
15. Give a brief account on genetic counselling?
16. Describe 'Cytoplasmic Inheritance' using plastid inheritance in Mirabilis.
17. Define the term 'gene mutation'. Briefly discuss the various types with suitable illustrations.

SECTION-C

ANSWER TWO QUESTIONS

(2X20=40)

18. Give a detailed account on the inborn errors of phenylalanine metabolism.
19. State and Explain Mendel's Laws of Inheritance.
20. Define 'Crossing Over'. Explain its evidence using Drosophila Experiments.
Comment on the factors affecting it and mention its significance.
21. Write an essay on non-disjunction with reference to the Klinefelters Syndrome and Turners Syndrome in Man.
