

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

SUBJECT CODE: ZL/MC/GS54

B.Sc. DEGREE EXAMINATION NOVEMBER 2010
BRANCH VI A – ADVANCED ZOOLOGY & BIOTECHNOLOGY
FIFTH SEMESTER

COURSE : MAJOR CORE
PAPER : GENETICS
TIME : 3 HOURS

MAX. MARKS: 100

SECTION – A

ANSWER ALL QUESTIONS

(10 x 3 = 30)

1. Distinguish giving a suitable example: Incomplete Dominance & Codominance.
2. What is Pleiotropism? Justify with an example.
3. **FILL IN THE BLANKS**
 - (a) Rh antigen was discovered by _____ & _____.
 - (b) Skin color in man is an example for_____.
4. Give examples for each (a) Intermediate lethal (b) Sex limited genes in man
(c) Maternal Influence
5. Tabulate any three differences between Qualitative & Quantitative traits.
6. What are the carcinogens? Give any Two examples.
7. Discuss the role of environmental factors in affecting sex determination with a suitable example.
8. Comment on Barr body.
9. What are the following? a) Coupling & Repulsion hypothesis
b) Hybrid vigour c) Oncogenes
10. Mention the characteristic features of a) Frame shift mutation
b) Multiple alleles c) Y – Linked Genes.

SECTION – B**ANSWER ANY FIVE QUESTIONS****(5 x 6 = 30)**

11. Why did Mendel choose *Pisum sativum* for his experiments? Explain Mendel's Monohybrid cross & his conclusions based on his observations.
12. Comment on Dominant Epistasis with a suitable example.
13. Discuss Ear length in maize with reference to Polygenes.
14. Describe the causes & characteristic features of any TWO syndromes caused by sex chromosomal anomalies.
15. Give a brief account of a) Hemophilia b) Genic balance mechanism of sex determination in *Drosophila*.
16. Describe any TWO chromosomal aberrations in the context of structural variations.
17. Give a brief account of Genetic counseling & its applications.

SECTION – C**ANSWER ANY TWO QUESTIONS****(2 x 20 = 40)**

18. Describe extra chromosomal inheritance.
19. Systematically enumerate the different types of mutations & explain the CLB method to detect mutation.
20. Discuss the role of genes in Oncogenesis.
21. Give a brief outline of the different methods of sex determination. Discuss sex determination in man. Add a note on non disjunction & its impact on human gender (with a suitable example).
