**STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI – 600 086**
**(For Candidates admitted during the academic year 2005-06 & thereafter)**

**SUBJECT CODE: ZL/MC/GN54**

**B.Sc. DEGREE EXAMINATION NOVEMBER 2007**
**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. Differentiate between
   (a) Monohybrid cross and Dihybrid cross
   (b) Klinefelters and Turners Syndrome
2. What is cytoplasmic inheritance?
3. **FILL IN THE BLANKS**
   (a) _____ is called as Father of Genetics
   (b) _____ replication is semi conservative
   (c) _____ are composed of two light chains and two heavy chains.
4. Give an example of each of the following
   (a) Epistasis (b) Sex Determination (c) Tumor suppressor gene
5. Define the following
   (a) Rh factor (b) Eugenics
6. Name any three mutagens.
7. **MATCH THE FOLLOWING**

| | | |
|---|---|---|
| (a) Muller | - | Cancer in chicken cells |
| (b) Out breeding | - | CIB Method |
| (c) Rous sarcoma virus | - | unrelated individuals |

8. Comment on hybrid vigour.
9. What are the following?
   (a) Transversion (b) Y-linked genes (c) Gene mapping

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10. **STATE TRUE OF FALSE**

(a) Lethal genes have beneficial effects that the organism is unable to live.

(b) Gynandromorphs are those in which some parts of the animal are female and other parts are male.

(c) Protooncogene is a normal cellular gene that can be changed to oncogene by mutation

**SECTION – B**

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

11. State and explain Mendelian Laws of Inheritance.
12. Enlist the most important features of the concept of crossing – over.
13. Comment on Barr bodies.
14. Explain different types of mutation.
15. What is genetic counselling?
16. Elucidate information on carcinogens.
17. Write an account on Chromosomal aberrations.

**SECTION – C**

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

18. Illustrate and explain the maternal effect in snail shell coiling.
19. Describe the ABO blood type alleles in humans.
20. Write an essay on oncogenes.
21. Explain sex linkage in Drosophila.

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