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 2009
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 between a) Penetrance & Expressivity
   b) Acrocentric & metacentric chromosome
2. What is Co – dominance? Give two examples.
3. **FILL IN THE BLANKS**
   (a) Two crosses concerning the same character but with reversed sex is called_____.
   (b) Linkage studies in maize were carried out by _____.
   (c) Coat color in rabbits is an example for _____.
4. Give examples for each of the following:
   (a) Dominant lethal
   (b) Duplicate recessive epistasis
   (c) Mutagen.
5. Define (a) Nondisjunction (b) Incomplete dominance.
6. Enlist any three theories of crossing over
7. Match the following:

(a) Brachyphalangy	-	Criss – cross Inheritance
(b) Hemophilia	-	Cytoplasmic inheritance
(c) Kappa particle	-	Intermediate lethal

8. Comment on the role of environment in sex determination.

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9. What are the following?

   (a) Barr body (b) Cytoplasmic inheritance (c) Eugenics

10. State True or False

   (a) In Bonellia sex is determined by genic balance mechanism.

   (b) In man, if inbreeding is carried out for many generations, it results in homozygosity.

   (c) Alkaptonuria is caused due to deficiency of the enzyme Tyrosinase.

SECTION – B

ANSWER ANY FIVE QUESTIONS (5 x 6 = 30)

11. Write an account on the causes & clinical features of (a) Down's Syndrome (b) Turner's Syndrome

12. Distinguish qualitative & quantitative traits. Describe the mode of inheritance of kernel color in wheat.

13. Discuss Sex – limited traits with any two examples.

14. Enumerate any two metabolic blocks with their causes & clinical features.

15. Explain cytological proof for crossing over in Drosophila.

16. Give a brief account of Genetic Counseling.

17. Explain the CLB method to detect mutation.

SECTION – C

ANSWER ANY TWO QUESTIONS (2 x 20 = 40)

18. Explain multiple alleles with respect to blood groups in humans. Discuss Rh incompatibility associated with pregnancy.

19. Discuss Mendel's monohybrid & dihybrid cross experiment.

20. Describe sex determination in Drosophila & man.

21. Highlight the role of genes in oncogenesis.

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