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

SUBJECT CODE: 11ZL/MC/GN34

B.Sc. DEGREE EXAMINATION NOVEMBER 2013
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. Differentiate between
   a. Test cross and back cross b. Cis and Trans arrangement of linked genes
2. What is meant by transgressive variations?
3. Fill up the blanks
   a. -------- is a lethal disease in man showing progressive degeneration of the nervous system.
   b. A purine base is replaced by another purine base in -------.
   c. Sex linked genes are located in the --------- region of the sex chromosome
4. Define the following: a. Chromosome map b. Erythroblastosis foetalis
5. Give example for each of the following:
   a. Aneuploidy in man b. Holandric genes in man c. Codominance
6. What are carcinogens? Give four examples.
7. Comment on tumour suppressor genes.
8. What are the following?
   a. Synapsis b. Hybrid vigour c. Gynandromorphs
9. Name any three diseases in man caused by lethal genes.
10. Mention the significance of AMES Test.

SECTION B

ASWER ANY FIVE QUESTIONS (5X6=30)

11. Explain Law of Independent Assortment with an example.
12. Brief the mode of plastid inheritance in *Mirablis jalapa.*
13. Describe the inheritance of skin colour in man.
14. Elaborate the mechanism of crossing over.
15. Explain genic balance mechanism of sex determination in Drosophila.
16. Enumerate the practical applications of Inbreeding.
17. Write short notes on:
    a) Eugenics b) Homeotic genes in Drosophila

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SECTION-C

ANSWER TWO QUESTIONS (2X20=40)

18. Explain mutilple allelism with reference to human blood group inheritance.
19. What are sex linked genes? Explain their inheritance with suitable examples.
20. Define epistasis? Explain dominant and recessive epistasis with a suitable examples.
21. Explain inborn errors of Phenylalanine metabolism.

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