

**STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI – 600 086**  
**(For Candidates admitted during the academic year 2019 – 2020 & thereafter)**

**SUBJECT CODE: 19ZL/MC/GN54**

**B.Sc. DEGREE EXAMINATION - NOVEMBER 2022**  
**BRANCH VI A – ADVANCED ZOOLOGY & BIOTECHNOLOGY**  
**FIFTH SEMESTER**

**COURSE : MAJOR CORE**

**PAPER : GENETICS**

**TIME : 3 HOURS**

**MAX. MARKS: 100**

**SECTION – A**

**ANSWER ALL THE QUESTIONS**

**(10 x 3 = 30)**

1. What is Kearns- Sayre syndrome?
2. Illustrate Test cross. Highlight its significance.
3. Distinguish between codominance and incomplete dominance.
4. Explain Transgressive variation.
5. State Lyon's hypothesis.
6. Mention the characteristics of Y- linked inheritance. Give an example.
7. Define Point mutation.
8. Enumerate any 3 inborn errors of Aminoacid metabolism.
9. What is a gene pool?
10. Define Epigenetics.

**SECTION – B**

**ANSWER ANY FIVE QUESTIONS**

**(5 x 6=30)**

11. Explain Dominant Epistasis with a suitable example.
12. Enumerate the characteristics of Multiple genes and explain the inheritance of Skin colour in humans.
13. Discuss Sex influenced and Sex limited genes in Humans.
14. Write a note on Genetic counselling.
15. Elaborate the importance of Captive breeding in conservation.
16. Discuss the types of chromosomal aberrations.
17. Analyse the role of Segmentation and Homeotic genes in *Drosophila* development.

**SECTION - C**

**ANSWER ANY TWO QUESTIONS**

**(2 x20=40)**

18. Explain Extra chromosomal inheritance with a relevant example and discuss the inheritance pattern of shell coiling in *Limnaea*.
19. Discuss Complete and Incomplete linkage in *Drosophila*.
20. Give an account on the chromosomal mechanism of Sex determination in animals.
21. Explain Hardy Weinberg Law and discuss the factors influencing allele frequency.

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