

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 2008
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
 - (a) Phenotype and genotype
 - (b) Plasmid and allele.

2. What is back cross?

3. **FILL IN THE BLANKS**
 - (a) If the parents phenotype has blood group (O x O) with genotype $+/+ \times +/+$ then what would be the offspring of phenotype _____ group and _____ genotype.
 - (b) There are two types of substance in the blood known as antigen and antibody. The antigens are located in _____ and antibody occurs in _____.
 - (c) The phenomenon of inheritance of linked genes in the same group is called as _____.

4. Give examples for each of the following:
 - (a) Somatic crossing over
 - (b) Mutagens
 - (c) Mutacor genes.

5. Define the following:
 - (a) Y – Linked genes
 - (b) Inter sex.

6. Name the three causes for point mutation.

7. Match the following:
- | | | |
|---|---|-------------------|
| (a) The chromosome which has no relation with sex | - | Sex linked genes. |
| (b) The chromosome which are responsible for sex | - | Autosome |
| (c) The genes which reside in the differential region of X chromosome | - | Sex chromosome |
8. Comment on P_{53}
9. What are the following?
- | | | |
|--------------|---------------|--------------------|
| (a) Eugenics | (b) Oncogenes | (c) Kappa particle |
|--------------|---------------|--------------------|
10. State True or False
- | |
|---|
| (a) Mule is the example for cross breeding. |
| (b) Inheritance of baldness in man is the example for Sex limited genes. |
| (c) If a women is Rh negative and her husband is Rh positive, the fetus may be Rh positive. |

SECTION – B

ANSWER ANY FIVE QUESTIONS

(5 x 6 = 30)

11. Explain the Incomplete dominance.
12. Write about Linkage in Drosophila.
13. Comment on Klinefelter's syndrome.
14. Briefly discuss Genetic counseling.
15. Describe Intrachromosomal aberrations.
16. Explain the CIB method to detect mutation
17. Write short notes on:

a) Apc genes	b) RB gene.
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SECTION – C

ANSWER ANY TWO QUESTIONS

(2 x 20 = 40)

18. Give an account of lethal genes with suitable examples.
19. Explain inheritance of human blood group.
20. Write an essay on Inbreeding, out breeding and Hybrid Vigour.
21. Write an essay on Sex Linkage in Man.
