

B.Sc. DEGREE EXAMINATION - NOVEMBER 2018
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. Define expressivity with an example.
2. Comment on Mendel's law of segregation.
3. Define Transgressive variation with an example.
4. State any three differences between complete and incomplete linkage.
5. Write short notes on Barr body.
6. What are sex limited genes?
7. Write a brief note on Aneuploidy.
8. Outline the classification of mutations based on cell types.
9. What is the need for genetic counselling?
10. Define gene frequency.

SECTION – B

ANSWER ANY FIVE QUESTIONS

(5 x 6=30)

11. Give a brief account of lethal genes and add a note on lethal alleles in human beings.
12. List out the characteristics of multiple genes and comment on the inheritance pattern with respect to skin colour in man.
13. "Haemophilia – Inheritance of X-linked recessive genes in human" – Justify.
14. Give a brief account on mutagens.
15. Highlight the three major classes of developmental genes in *Drosophila*.
16. Give a brief account on Hardy-Weinberg law and add a note on the factors influencing allele frequency.
17. Enumerate the three different techniques adopted in Animal breeding.

SECTION - C

ANSWER ANY TWO QUESTIONS

(2 x 20=40)

18. Outline the various cases of extra-chromosomal inheritance and explain in detail about the maternal influence on shell coiling in *Limnaea*.
19. Describe the characteristics of multiple alleles with emphasis on inheritance of ABO blood grouping and Rh factor.
20. Discuss in detail about the chromosomal mechanism of sex determination.
21. Explain the three important diseases associated with metabolic breakdown of phenylalanine.
