

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2022
(Third Semester)

Branch – ZOOLOGY

GENETICS

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(5 x 1 = 5)

1. The law of segregation is also called
 - (i) Law of independent assortment
 - (ii) Law of dominance
 - (iii) Law of purity of gametes
 - (iv) First cross.
2. In the ABO system, blood group 'O' is characterized by the:
 - (i) presence of antigen O
 - (ii) presence of both antigen A and antigen B
 - (iii) absence of both antigen A and antigen B
 - (iv) presence of antigen A and absence of antigen B
3. Repulsion and coupling are two faces of
 - (i) mutation
 - (ii) chiasmata
 - (iii) linkage
 - (iv) crossing over
4. A human female with Turner's syndrome
 - (i) has one additional X chromosome
 - (ii) has 45 chromosomes with XO
 - (iii) is able to produce children with a normal husband
 - (iv) exhibits male characters
5. Improvement of the Human race by improving the environmental conditions is
 - (i) Eugenics
 - (ii) Euthenics
 - (iii) Euphenics
 - (iv) Dysgenics

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks

(5 x 3 = 15)

6. a) What is co-dominance? Explain with reference to ABO blood group in humans.
(or)
b) Describe the inheritance of flower colour in *Mirabilis*.
7. a) Write short notes on complementary gene.
(or)
b) Give a brief account of Supplementary gene.
8. a) Give an account on types of linkage.
(or)
b) Point out the significance of crossing over.
9. a) Comment on Aneuploidy.
(or)
b) Discuss about the Barr body.
10. a) Write short notes on sickle cell anemia.
(or)
b) List out the merits of Inbreeding.

Cont...

SECTION -C (30 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

11. a) Explain the Principles of Mendel's Law.
(or)
b) What is incomplete dominance? Explain the inheritance of flower colour in pea plants.
12. a) Write a detailed account of polygenic inheritance.
(or)
b) Discuss the multiple alleles with reference to Rh blood group.
13. a) Write a brief note on Haemophilia.
(or)
b) Discuss about the sex determination in man.
14. a) Give an account of Klinefelter's syndrome.
(or)
b) Describe the Down's syndrome.
15. a) Discuss about the inborn errors of metabolism.
(or)
b) Write an account of Hardy Weinberg Law.

Z-Z-Z

END