

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2023
(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. In case of incomplete dominance monohybrid F1 _____ is 1:2:1.
i) Genotype ii) Phenotype
iii) Both genotype and phenotype iv) The ratio is wrong.
2. When two or more nonallelic gene pairs affect the same character in the same way, it is called
i) pleiotropy ii) polygenic inheritance
iii) additive expressivity iv) total penetrance.
3. Crossing over more frequent in
i) Males ii) Females iii) both iv) None of these.
4. How many autosomes are present in a human being?
i) 20 pairs ii) 22 pairs iii) 23 pairs iv) 44 pairs.
5. Which of the following is a type of autosomal recessive genetic disorder?
i) Haemophilia ii) Skeletal dysplasia
iii) Sickle cell anaemia iv) None of the above.

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks (5 x 3 = 15)

6. a) Write a brief note on Law of independent assortment.
OR
b) Describe the inheritance of flower colour in *mirabilis*.
7. a) What are complementary genes? Explain the inheritance of Pericarp colour in Barley.
OR
b) Give a brief account of Rh blood group.
8. a) Briefly explain the coupling and Repulsion.
OR
b) Explain the sex linked inheritance with reference to inheritance of colour blindness.
9. a) Comment on polyploidy.
OR
b) Discuss about the Barr body.
10. A) Write short notes on out breeding.
OR
b) Point out the significance of Hardy Weinberg Law.

Cont...

SECTION -C (30 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks (5 x 6 = 30)

11. a) Explain the law of segregation.

OR

b) What is Co-dominance? Explain the inheritance of coat colour in short horn cattle.

12. a) Write a detailed account of supplementary gene with reference to inheritance of coat colour in Mice.

OR

b) Discuss the multiple alleles with reference to ABO blood group.

13. a) Write a brief note on linkage in Drosophila.

OR

b) Discuss about the cytological evidences for crossing over.

14. a) Give an account of Numerical chromosomal abnormalities.

OR

b) Describe the Turner's syndrome.

15. a) Discuss about the types of inborn errors of metabolism.

OR

b) Write an account of merits and demerits of inbreeding.

Z-Z-Z

END