

SHIVAJI COLLEGE, UNIVERSITY OF DELHI

DEPARTMENT OF ZOOLOGY

INTERNAL TEST (Academic Year 2023-24)

Name of the Course : B.Sc. (H) Zoology Semester : V
Name of the Paper : Principles of Genetics Faculty Name : Dr. Ankita Dua
Duration : 1 hr Maximum Marks: 30
Date of Test : 17.10. 2023

1. What is epistasis? Explain an example of dominant epistasis along with its biochemical basis. 4
2. What type of dominance is shown by ABO blood group in humans? What are the genotypes of the phenotypes observed in the human population? 2
3. Define: 4
 - a. Pleiotropy
 - b. Phenocopy
 - c. Penetrance
 - d. Expressivity
4. Differentiate between: 2*5= 10
 - a. Continuous & discontinuous characters
 - b. Sex limited & sex influenced traits
 - c. Epistatic & hypostatic gene
 - d. Pleiotropy & polygenic characters
 - e. Incomplete dominance and codominance
5. State the contribution of: 3*1=3
 - a. Alfred Sturtevant
 - b. Walter Sutton
 - c. William Johannsen
6. What are lethal alleles? Explain with an example. 2
7. In *Drosophila*, three genes are linked in one chromosome. Assume one parent is 5 dominant and the other one is recessive. In a test cross, the following results were obtained:

ABC	450
abc	490
aBC	28
Abc	32
aBc	196
AbC	204
ABc	288
abC	312
TOTAL	2000

- a. What is the order of genes?
- b. Determine the map distance and construct the chromosomal map.
- c. Calculate the coefficient of coincidence and interference.

Faculty Signature:

