

**GIRLS' HIGH SCHOOL COLLEGE, PRAYAGRAJ**  
**2020-2021**  
**CLASS XII A**  
**SUBJECT-BIOLOGY**  
**TOPIC: GENETICS**  
**LESSON: PRINCIPLE OF INHERITANCE AND VARIATIONS**  
**E-LEARN ASSIGNMENT WORKSHEET NO-02**

**INTRODUCTION:**

1. Parents please make sure that your ward watches the videos carefully by clicking on the given link:  
<https://youtu.be/DrhwdN4ekDA> ;                      <https://youtu.be/XXwz1wFXzSc>
2. She should revise the lesson given in the book and then work on the assignment.
3. Completed assignment is to be downloaded and filed/ pasted in the subject file/copy and kept ready for submission. The date and procedure of the submission will be notified later.

**ANSWER THE FOLLOWING QUESTIONS BRIEFLY:**

**1. Define the following terms:**

- a. Monohybrid and Dihybrid
  - b. Homozygous and Heterozygous
  - c. Emasculation
2. Why is every character controlled by a pair of genes? What was the term used by Mendel for genes?
  3. Give the second law of inheritance given by Mendel. Explain it by giving a suitable example and ratios.
  4. In a cross between a black and a white Guinea pig, all **F1** members are black but **F2** members generation raised by crossing two such **F1** consists of approximately  $\frac{3}{4}$  black and  $\frac{1}{4}$  white Guinea pigs.
    - a. What are the possible genotypes at each level?
    - b. What will the offspring be like if two **F2** whites are mated?

5. What were the limitations of the second law of inheritance given by Mendel?
6. A dihybrid heterozygous round yellow seeded garden pea (*Pisum sativum*) offspring was crossed with a double recessive parent:
  - a. What type of cross is this?
  - b. Work out the genotype and phenotype of the progeny.
  - c. Which principle of Mendel is illustrated through the result of this cross?

**7. Explain the following terms:**

- a. Genotype
- b. Back cross
- c. Test cross
- d. Reciprocal cross

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