

**GRADE 12 BIOLOGY**

**UNIT A – GENETICS**

**MENDEL - SECTION 11.1**

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Instructions.** Written responses are to be fully grammatically correct sentences!

1. **Single word response.** The scientific study of heredity is called:
  
2. Circle the letter of **each** sentence that is true about Gregor Mendel's peas.
  - a. The male parts of pea flowers produce eggs.
  - b. When pollen fertilizes an egg cell, a seed for a new plant is formed.
  - c. Pea plants normally reproduce by self-pollination.
  - d. Seeds that are produced by self-pollination inherit their characteristics from two different plants.

*I do not like questions with more than one correct choice but some teachers do!*

3. **Explain.** To perform his experiments, how did Mendel prevent pea flowers from self-pollinating and control their cross-pollination

4. **Explain.** What does it mean when pea plants are described as being '**true-breeding**'?

## 5. Genes and Dominance

Match the term with its definition. Inscribe the correct letter of the term in the blank underlined space.

Definition	Term
<u>      </u> Specific characteristics that vary from one individual to another	a. genes
<u>      </u> The offspring of crosses between parents with different traits	b. traits
<u>      </u> Chemical factors that determine traits	c. alleles
<u>      </u> The different forms of a gene	d. hybrids

Is the following sentence **True** or **False**? An organism with a recessive allele for a particular form of a trait will always exhibit that form.       

6. State the principle of dominance.

7. Circle the **letter(s)** of the traits controlled by dominant alleles in Mendel's pea plants.

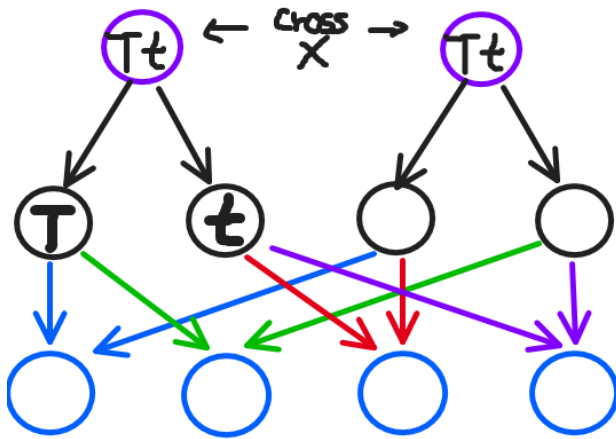
- a.** tall      **b.** short      **c.** yellow seeds      **d.** yellow pods

*(more than one correct answer)*

8. **Complete the blank.** About one fourth of the F<sub>2</sub> plants from Mendel's F<sub>1</sub> crosses showed the trait controlled by the \_\_\_\_\_ allele

9. **Explain.** What are gametes?

10. Complete the following diagram to show how alleles segregate during the formation of gametes.



F<sub>1</sub> Parents

Gametes segregate

F<sub>2</sub> Child