

## Define the following

Genetics, Heredity, true breeding, Fertilization, Alleles, Recessive, Heterozygous, Phenotype, DNA, Chromatid, Meiosis

## Fill the blanks:

1. In plants, the first cell to be formed as a result of fertilization is called a .....
2. The first group of multiple cells is called an .....
3. The male flower reproductive cells, called .....
4. The process Mendel used to combine the hereditary material of one plant with another plant is called .....
5. There are two types of nucleic acid molecules crucial for life ..... and .....
6. The bases of a pair are always the same: cytosine pairs with ..... and ..... pairs with thymine.
7. Chromosomes are located within the ..... of our .....
8. The ..... region of a chromosome joins two identical copies of the chromosome known as .....
9. The division of the cell's cytoplasm, called .....
10. MITOSIS .....Reproduction and ..... Formation.
11. The first cell of the progeny is actually a fusion of a .....nucleus from the ..... and from the ..... plant.
12. Each pollen grain consists of two cells: one called the ..... and the other called the .....

Q1 : When we are mating between Yellow and Disk pumpkin plant

With White round plant ( homozygous for each trait ) which genotype and phenotype produced in : -

- ▶ F1 first generation
- ▶ F2 second generation
- ▶ Back cross with white – round parent ?

Q2/ That we are dealing with two different traits: (1) seed texture (round or wrinkled) & (2) pod color (green or yellow). Notice also that each parent is hybrid for each trait (one dominant & one recessive allele for each trait).

Q3/ The cross b/w true breeding tall pea plant and pure breeding dwarf pea plant.

- ▶ F1 first generation

- ▶ F2 second generation

**Explain this question below:**

**1. Nucleic acids can be described as having three distinct chemical parts:**

- a.**
- b.**
- c.**

**2. What is cell cycle and write the of cell cycle?**

**3. Explain prokaryotic cell division (Binary or direct cell division) with picture.**

**4. prophase I in MEIOSIS I**

**Choice correct answer: -**

**1. The single-ring base is called a**

- a. RNA**
- b. pyrimidine**
- c. purine**

**2. The difference between thymine and uracil is the presence of an extra chemical component called a**

- a. sugar**
- b. an oxygen atom**
- c. methyl group**

**3. The deoxy- in DNA means that the sugar in this nucleic acid is missing**

- a. hydroxyl group**
- b. an oxygen atom**
- c. carbon group**

**4. stronger of two genes expressed in the hybrid; represented by a capital letter (R)**

- a. Alleles**
- b. gene**
- c. Dominant**

**5. The nucleotides that make up the sides of the ladder are called**

a. DNA    b. RNA    c. complementary strands

6. Synthesis of proteins and RNA in phase

a. Gap1    b. S Synthesis    c. Gap2

7. Mitosis is a division of

a. DNA    b. cytoplasm    c. nucleus