I. Understanding Mendel’s Laws: underline the correct word/words to complete the text.

At fertilization, the union of the sperm cell and the egg cell results in a **zygote** that contains “**unit factors**”. These unit factors are later referred to as **genes**. A variant of a gene controlling the same trait is called a **allele**. The variants of a gene for a trait may exist in pairs. By the time that the offspring is capable of producing its own sex cells (or gametes), the members of these paired unit factors will **segregate** and then assort **independently** into the newly formed gametes. These events occurs during **meiosis**. Each gamete will contain only one member of every paired unit factors.

II. Multiple Choice: encircle the letter of the correct answer.

1. Alleles segregate and get distributed into the new sex cells during
   a. Mitosis
   b. Meiosis I
   c. Meiosis II
   d. Meiosis I and Meiosis II

2. The random separation of the members of a pair of alleles will result in ...
   a. a reproductive cell with only one member of the paired allele.
   b. the total number of genes reduced to half from one generation to the next.
   c. reduced gene variation.
   d. the organism becoming a new species due to the resulting mutation.

3. In humans, the sex is determined by
   a. Autosomes
   b. Sex chromosomes
   c. Both autosomes and sex chromosomes
   d. None of the above

4. Which of these statements is correct?
   a. X and Y chromosomes are an example of a homologous pair because both of them are sex chromosomes.
   b. Sex-linked genes are examples of alleles that do not assort independently and therefore are inherited together.
   c. In humans, females possess XX chromosomes while males possess YY chromosomes.
   d. Sperm cells are **homogametic** because some will possess the X chromosome while the others will have the Y chromosome.