

## Exit Card-Grade 12 Biology Mutations

### Question 1

What is the primary difference between a mutation in a somatic cell and a mutation in a reproductive cell?

- A. Mutations in somatic cells are beneficial, while mutations in reproductive cells are harmful.
  - B. Mutations in somatic cells can be passed to future generations, while mutations in reproductive cells cannot.
  - C. Mutations in reproductive cells can be passed to future generations, while mutations in somatic cells cannot.
  - D. Mutations in somatic cells involve more genes than those in reproductive cells.
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### Question 2

Which of the following is a likely consequence of a frameshift mutation?

- A. The reading frame of the gene is altered, potentially changing the entire sequence of amino acids.
- B. The mutation only changes a single amino acid in the polypeptide sequence.
- C. The mutation has no effect due to genetic code redundancy.
- D. The mutation only occurs in non-coding regions and does not affect the polypeptide product.

### Question 3

Which of the following types of chromosomal mutations involves a segment of a chromosome being re-inserted in the opposite direction?

- A. Deletion
  - B. Duplication
  - C. Inversion
  - D. Translocation
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**Question 4**

What are transposable elements, or transposons?

- A. Sections of chromosomes that always remain stationary during cell division.
  - B. Specific DNA sequences that move within or between chromosomes, disrupting genetic information.
  - C. Segments of chromosomes that only appear in certain species, such as plants.
  - D. Chromosomal regions that increase the number of chromosomes in an organism.
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**Question 5**

Which of the following best describes a mutagen?

- A. Any mutation that occurs spontaneously within the cell.
- B. A genetic rearrangement that only occurs in chromosomes of reproductive cells.
- C. An external agent or event that increases the rate of mutation in an organism.
- D. A segment of DNA that duplicates spontaneously during replication.