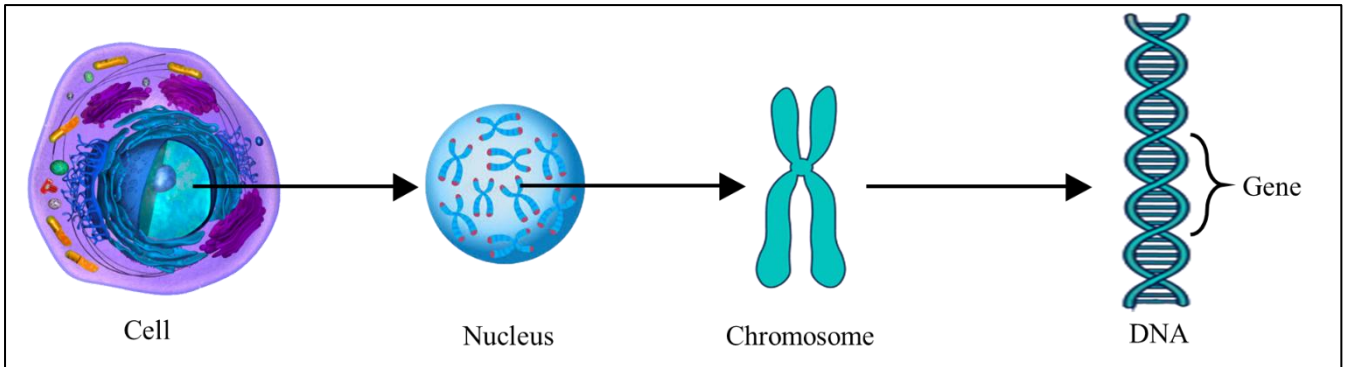


Name of the student: ..... Date: ...../...../.....

❖ **Gene (Heredity Unit):**



- The part of DNA that makes an mRNA is called a **gene**.
- Gene is a segment of the DNA molecule which retains all the information about the structure and regulation of an **mRNA** or **polypeptide** chain.
- A human chromosome can have up to **500 million** base pairs of DNA with about **40,000** genes.
- **3%** of a DNA is able to make gene.
- A **genome** is an organism's complete set of DNA, including all of its genes.
- The location of a gene throughout a chromosome is called **locus**.
- In a pair of chromosomes, genes are spread or structured in pairs.
- Gregor Johan Mendel called the genes as **factors**.
- **Gene** controls all the visible and the invisible signs and characters of organisms.
- The character, which is expressed in the first generation form the parent is called **dominant character**.
- The character, which is not expressed in the first generation but is expressed in the second generation, is called a **recessive character**.

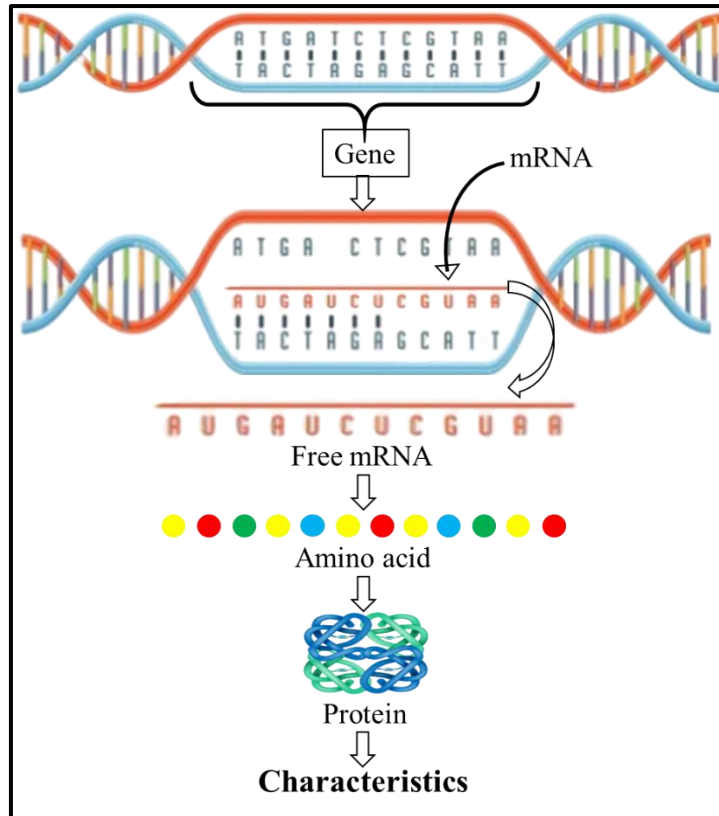
Q. Why is gene called unit of heredity?

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## ❖ Gene Expression:



- ✓ The process of making an mRNA copy of a gene sequence is called **transcription**.
- ✓ The process of transferring the encoded information from the DNA to mRNA is called **transcription**.
- ✓ The genetic information transferred to the mRNA from DNA is called **genetic code**.
- ✓ The basic unit of genetic information is called **codon**.
- ✓ The synthesis of a protein molecule according to the genetic code encoded in mRNA molecule by adjoining specific amino acids is known as **translation**.
- ✓ Protein is said to be **language of life**.

DNA → mRNA → Protein → Characteristics

Q. How does gene express character?

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