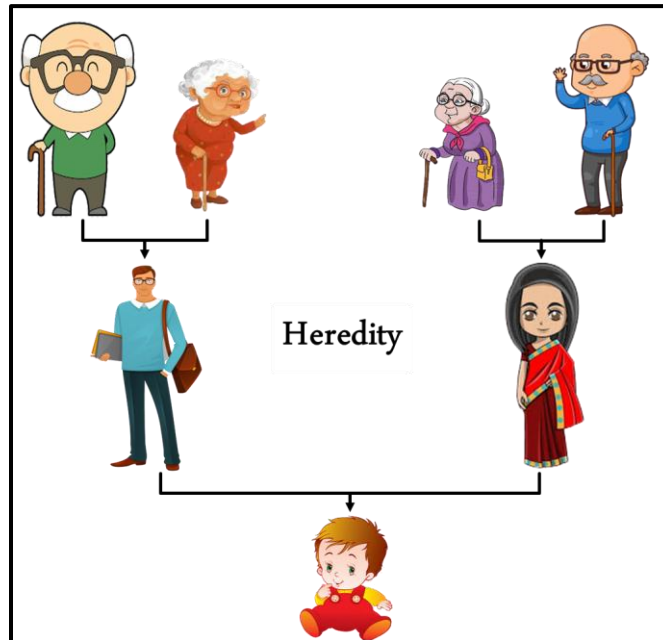


Name of the student: ..... Date: ...../...../.....

❖ The following figure indicates the passing of traits from one generation to another generation.



Q. What is heredity?

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- Chromatin consists of the unraveled condensed structure of DNA for the purpose of packaging into the nucleus.
- Nucleosome is composed of a little less than two turns of DNA wrapped around a set of eight proteins called histones.

❖ Chromosome:

- Chromosome is a thread-like structure in which a DNA molecule is tightly packaged within the nucleus.
- Each chromosome is made up of a single molecule of DNA tightly coiled many times around proteins called histones that support its structure.

- The structural unit of a eukaryotic chromosome is the nucleosome.

❖ The most important function of chromosomes is to carry the basic genetic material—DNA from parents to progeny.

Q. Why are chromosomes designated as the physical basis of heredity?

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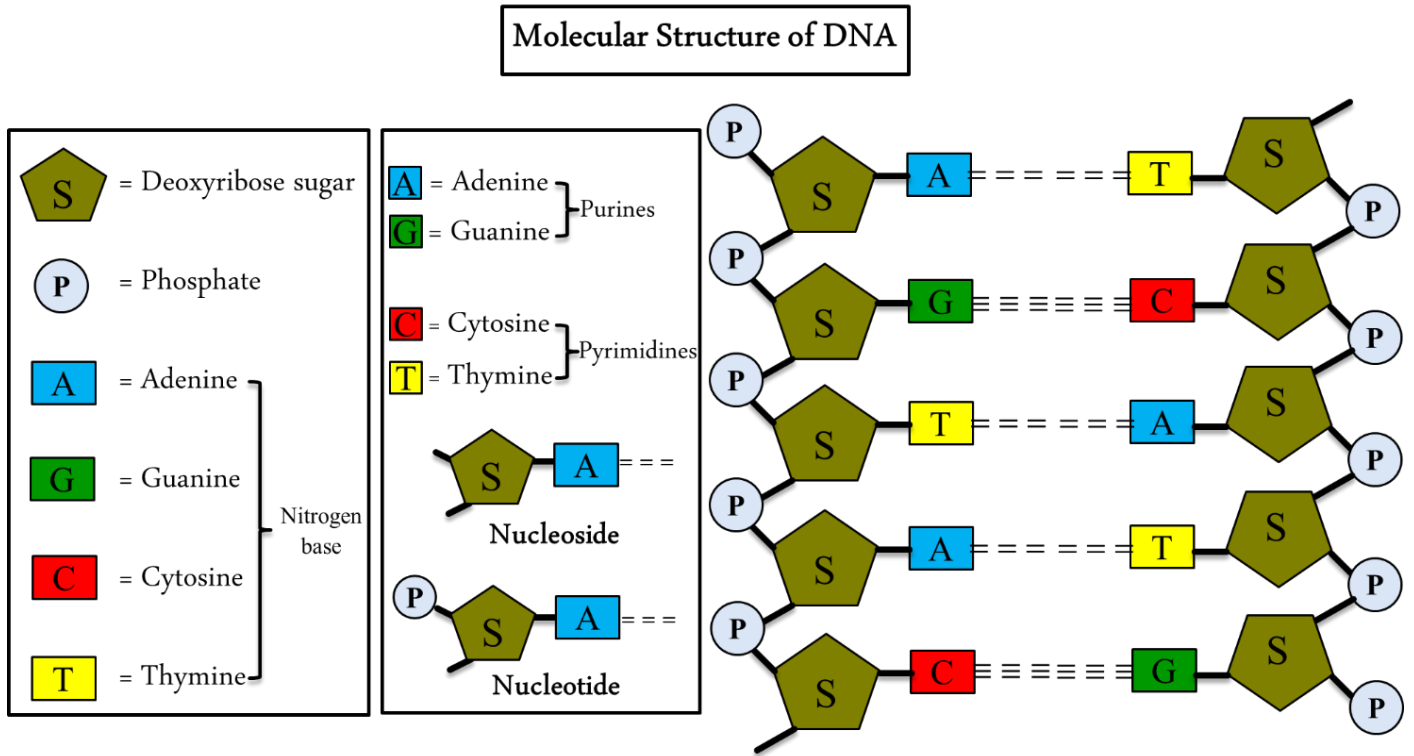
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❖ DNA (Deoxyribonucleic Acid):

- DNA is usually a double stranded spiral structure of polynucleotides. A strand is complementary to the other.
- A human DNA is about 1.8 meters (5 feet) long.
- In it there are five carbon sugars (Deoxyribose sugar), nitrogen bases (adenine, guanine, cytosine, thymine) and inorganic phosphate. These three components collectively are called a nucleotide.

❖ The following figure indicates the molecular structure of DNA.



Q. Describe the molecular structure of DNA from the above figure.

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❖ RNA (Ribonucleic Acid):

- RNA stands for ribonucleic acid. Most of the RNAs are single stranded.
- It is composed of 5 carbon ribose sugar, inorganic phosphate and nitrogen bases (adenine, guanine, cytosine and uracil).
- Of the many types of RNA, the three most well-known are—
  - 1) Messenger RNA (mRNA)
  - 2) Transfer RNA (tRNA)
  - 3) Ribosomal RNA (rRNA)

Q. Write down five difference between DNA and RNA.

DNA	RNA