

Question bank of nucleic acid

Define

Nucleic acid, DNA, RNA, Nucleosides, Nucleotides, mRNA, rRNA, tRNA

Give an example on each of the following compounds

Nucleoside monophosphate, nucleoside diphosphate, nucleoside triphosphate, cyclic nucleotides

Write four functions of nucleotides

Write the functions of DNA

What are the main differences between RNA and DNA

Fill the blanks

1. The main components of nucleic acids are the -----,-----, and -----
2. All nitrogenous bases of nucleic acid are derived from two heterocyclic bases---, and -----
3. The major pyrimidine bases are ----,----,and-----
4. Two principal purine bases -----, and ----- are found in DNA and RNA.
5. Cytosine and uracil are found in ----- and Cytosine and Thymine in -----.
6. In DNA, there are ---- hydrogen bonds between A and T, while there are ---- hydrogen bonds between C and G.
7. In RNA, there are ---- hydrogen bonds between A and u, while there are ---- hydrogen bonds between C and G.
8. DNA is a very long macromolecule made up of many -----

9. Nucleic acids are polymers of -----

10. In DNA, the nucleotides are linked together by ----- bonds.

11. In DNA, The nucleotides are linked together between ---- on the sugar of one nucleotide and the ----- on the sugar of another nucleotides

Draw the structures for nucleotides consisting of the following units.

1. Ribose, adenine, two phosphoryl groups
2. 2-Deoxyribose, guanine, three phosphoryl groups
3. 2-Deoxyribose, thymine, one phosphoryl group
4. Ribose, cytosine, three phosphoryl groups
5. 5- Ribose, uracil, one phosphoryl group

How many hydrogen bonds link the adenine-thymine base pair? Write a structure

How many hydrogen bonds link the guanine-cytosine base pair? Write a structure

List the three classes of RNA molecules and what is the function of each of the classes of RNA molecules?