

General Science and Ability (2022)

Q. (a) What do you understand by the DNA and RNA?

DNA : (Deoxyribonucleic Acid)

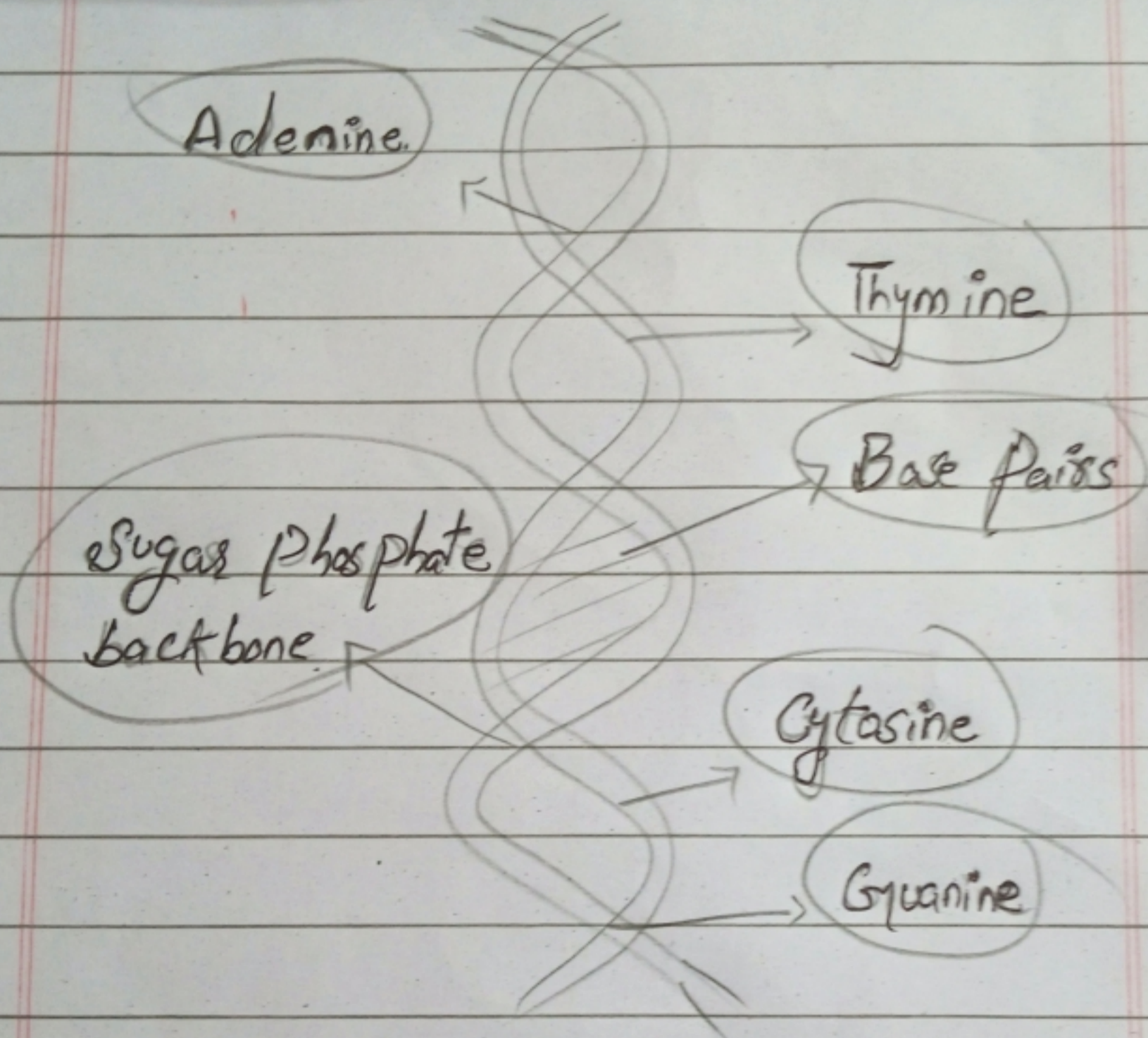
DNA is a double-stranded helix composed of nucleotides. Each nucleotide consists of a sugar molecule (deoxyribose), a phosphate group and a nitrogenous base (adenine, thymine, cytosine or guanine).

Function of DNA :

DNA stores genetic information used for the development, functioning and reproduction of all living organisms and mainly viruses. It acts as a blueprint for protein synthesis and the transmission of a hereditary information from generation to generation.

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Structure of DNA



Location of DNA:

In eukaryotic cells, DNA is primarily located in cell nucleus, while a small amount can also be found in mitochondria (mtDNA). In prokaryotic cells, DNA is found in the cytoplasm.

RNA : (Ribonucleic Acid)

RNA is typically single- stranded and is made up of nucleotides.

Each nucleotides consists of a sugar molecule (ribose), a phosphate group, and a nitrogenous base (adenine, uracil, cytosine or guanine).

Functions of RNA :

RNA plays various roles in coding, decoding, regulation and expression of genes.

There are following sub-types of RNA include:

(i) Messenger RNA :

It carries genetic information from DNA to the ribosome, where proteins are synthesized.

(ii) Ribosomal RNA :

A component of ribosomes, which are sites/sites of protein synthesis.

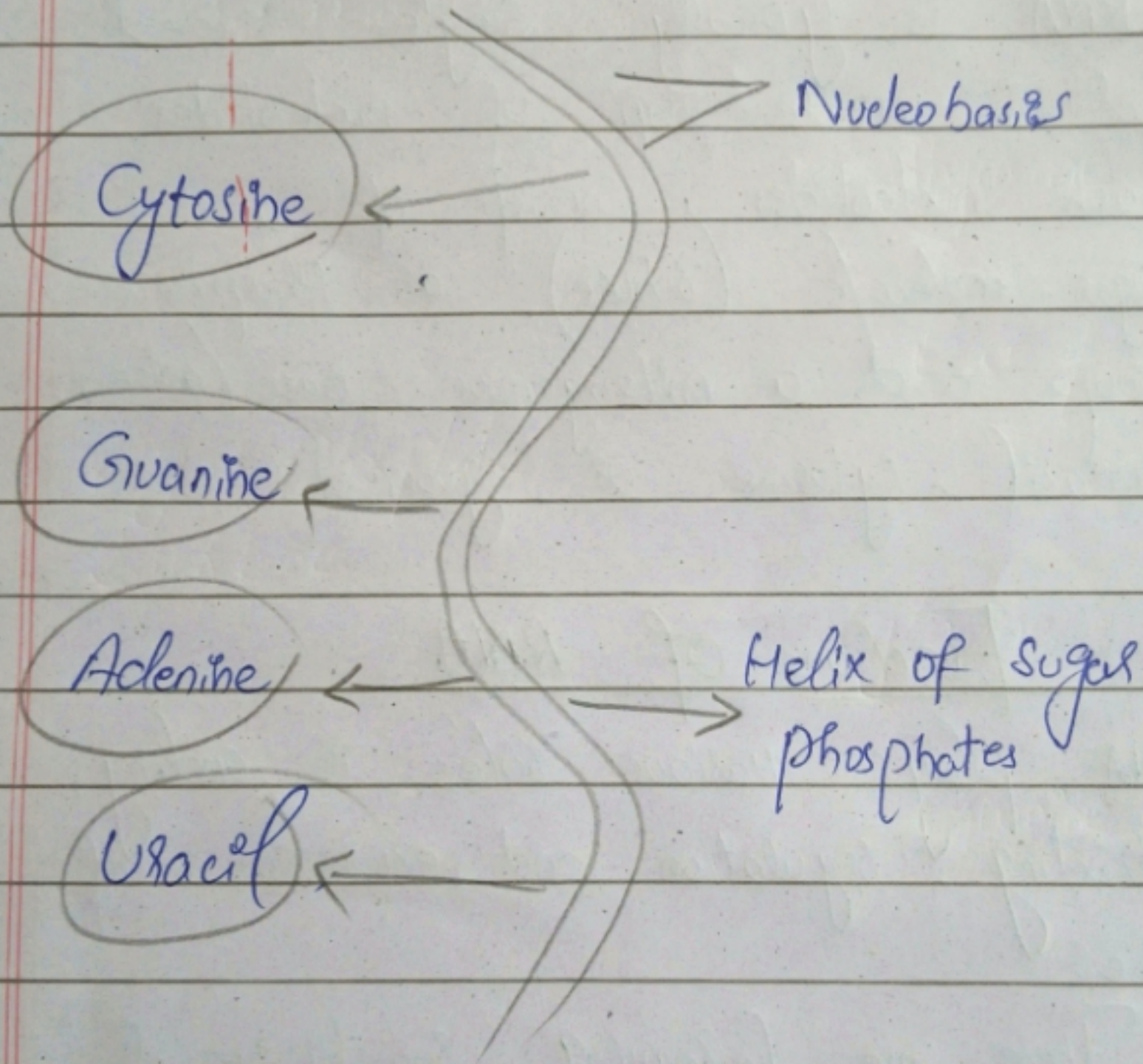
(iii) Transfer RNA :

It helps to decode mRNA into amino acids during protein synthesis.

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Structure of RNA :



Location of RNA :

Ribonucleic acid is found in the cell nucleus and cytoplasm.

