

## 1.3 The Nucleus

The nucleus of the cell is the main control center and acts like the cell's brain. Remember that the eukaryotic cells have a nucleus and it is an organelle in the cell, which has a special function that is surrounded by a membrane (**outer boundary of the cell**) that protects it from the rest of the cell where it floats within the cytoplasm (**fluid in the cell, mostly water**). The most important function of the nucleus is to store the cell's genetic information in the form of DNA where it holds the instructions for how the cell should work. The molecules (**two atoms joined together**) of the DNA are organized into special structures known as chromosomes (**tiny structures made from DNA and protein**) where sections of the DNA are known as genes which hold hereditary information.

The nucleus holds another type of nucleic acid called **Ribonucleic Acid** (RNA), which makes proteins known as protein synthesis (**cell makes protein**). The nucleus can make exact copies of its DNA. The nucleus makes RNA which can be used to carry messages and copies of DNA instructions known as transcription process and the RNA is used to configure amino acids into special proteins for use in the cell known as the translation process.

## 1.4 Self-Check Questions for the Nucleus Sub-Section

1. What is a Nucleus?
2. Does the eukaryotic cell have a nucleus?
3. What is a molecule?
4. What is another type of nucleic acid that the nucleus holds?
5. What is nucleus able to copy?