Protein Synthesis:-

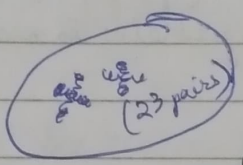
- It is the production (synthesis) of polypeptide chains (protein)
- Two stages of protein synthesis:- 1) Transcription
  2) Translation

DNA
Flow of Organization:-

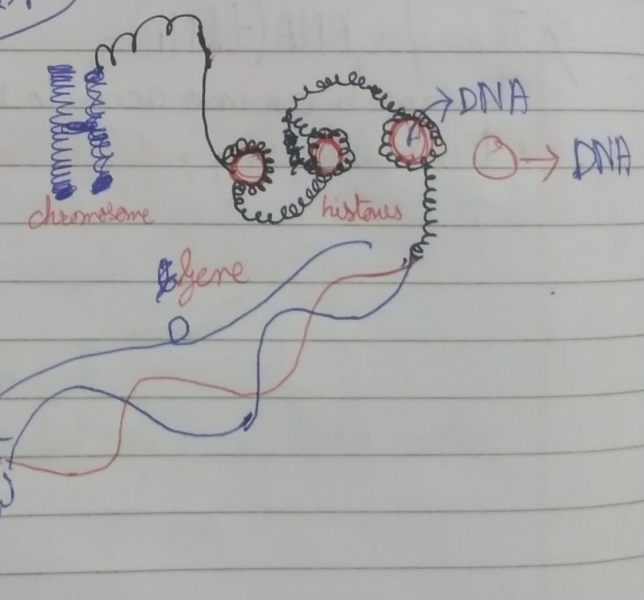
1. The entire set of genetic material → Genome
2. Composed of 23 pairs of → Chromosome
3. Each chromosome consist of DNA tightly coiled around → histone
4. Histones has → DNA
5. DNA contains instruction for making proteins in the form of → Genes

In nucleus,
→ Genome → Chromosome → histones → DNA → Genes

Structure :-



Each chromosome :-



∴ Histones → DNA → Gene

Genes & Proteins:-

Proteins → 20 different amino acids linked together by peptide bonds

This amino acids chain → polypeptides

The segment of DNA that codes for the amino acid sequence in a protein is called gene

Genetic Code:-

DNA contains a triplet code

Every 3 bases on DNA ~~strand~~ = 1 amino acid

Each 3 letter unit on mRNA is called codon

Most amino acids have more than 1 codon

∴ There are ~~Each DNA has~~ 20 amino acids

∴ No. of possible triplets = 64

Eg:- 5′ ATG TTT GCA TCA 3′

3′

Triplet code

Here, • ATG codes methionine (start codon) • GCA codes alanine

• TTT codes phenylalanine • TGA → stop codon

Every codon is responsible for coding its corresponding amino acid or stop signal

5′ ATG TTT GCA TCA 3′

(start codon) (end codon)

A DNA strand starts with start codon and ends with end codon