# Nucleic acid part (2)

# Some important difinitions:

- Gene: a DNA sequence that codes for a polypeptide,rRNA or tRNA.
- Genome: a complete set of chromosomes which contain the genes.
- Genetic code:the set of nucleotide base triplet (codons) that code for the amino acids in proteins .
- Diploid genome: is that one which consists of two copies of each type of chromosome.
- Haploid genome: consists of one copy of each chromosome.
- Chromosome: composed of DNA that contains the genes of an organism.
- Replication: synthesis of DNA copy
- Transcription : synthesis of RNA using DNA as template.
- Transcription: prptein synthesis
- Mutation : any change in the nucleotide sequence of agene.
- DNA→RNA→PROTEIN

# Important functions of nucleotide:

1-they are monomer of DNA and RNA.

2-form high energy molecule such as ATP.

3-some of them serve as a component of many coenzymes(like NAD+) and regulatory molecules (such as cAMP).

# Disorder and diseases from defect in purine catabolic pathways:

Gout disease: refers to the deposition of sodium urate crystals in and around joints due to high levels of uric acid (hyperuricemia) in blood.

Note / uric acid is the final product of purine catabolism that is found in nucleic acids.

There are two types of gout:

1- primary gout: caused by genetic defect in purine metabolism that lead to overproduction of uric acid.

2-secondary gout: this type is occur as aresult of purine overproduction that lead to hyperuricemia or decreased secretion of uric acid by kidney.