

## **Dr. Suman Chauhan**

**Botany Deptt.**

**N.A.S. College (P.G.)**

**B.Sc (Final Year)**

### **Nucleotide and Nucleoside**

In nucleic acids nitrogenous bases are attached to the 1 carbon of pentose sugar by a covalent bond. The pyrimidine bases are bonded at their nitrogen while purine bases are bonded at nitrogen 9. A nitrogenous base with a pentose sugar molecule form a **nucleoside**

Phosphate group is attached to 51 carbon atom of pentose sugar. The compound sugar + Base + Phosphate group a nucleotide.. In DNA the nucleotide and nucleoside are called deoxy-ribonucleosides and deoxyribonucleotides while in RNA these are called ribonucleosides and ribonucleotides.

**1. Nucleosides** A nitrogenous base with a molecule of deoxyribose is known as deoxyribonucleoside or nucleoside nitrogenous base is attached to first carbon atom of deoxyribose.

#### **2. Nucleotide**

A nucleotide is formed of one molecule of deoxyribose one molecule of phosphoric acid and one of the four nitrogenous bases. Thus a nucleotide is a nucleoside mono phosphate.

Since there are four nitrogenous bases there are four types of nucleotides.

1. Deoxy adenylic acid or d AMP
2. Deoxy guanylic acid or d GMP
3. Deoxy cytidylic acid or d CMP
4. Deoxy thymidylic acid or d TMP