

# SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution) Coimbatore – 35 DEPARTMENT OF BIOMEDICAL ENGINEERING



## **Nucleotides – Purines and Pyrimidines :**

Nucleic acids are the polymers of nucleotides. Nucleotides are made of three components:

- 1. 5-carbon sugar
- 2. Nitrogenous base
- 3. Phosphate groups

### Structure of nucleic acids:

#### Sugar unit:

If the sugar unit present in the nucleic acid is a ribose, then the polymer is called ribonucleic acid (RNA) and if the sugar is deoxyribose, then the polymer is deoxyribonucleic acid (DNA).

### Nitrogen base:

Nucleic acids contain purine and pyrimidine bases. They are Adenine (A), Guanine (G), Cytosine (C), Thymine (T) and uracil (U).

#### **Purine bases**

Adenine (A), Guanine (G)

### **Pyrimidine bases**

Cytosine (C)

Thymine (T)

Uracil (U)



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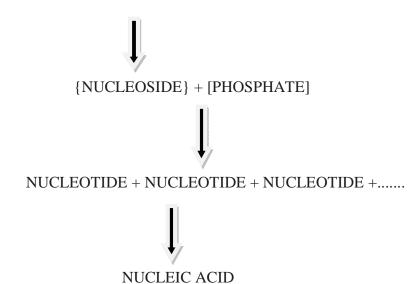
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### Phosphate group:

In nucleic acids, sugar unit and nitorgenous base can combine to form a nucleoside, these nucleosides combine with a phosphate to form a nucleotide, which in turn polymerises to form nucleic acids.

[PENTOSE SUGAR] + [PURINE] or [PYRIMIDINE BASE]



COMPONENTS	RIBONUCLEIC ACID	DEOXYRIBONUCLEIC ACID
Acid	Phosphoric acid	Phosphoric acid
Pentose Sugar	D-ribose	D-2 deoxy ribose
Nitrogen Bases		
i. Purines	Adenine	Adenine
	Guanine	Guanine
ii. Pyrimidines	Cytosine	Cytosine
	Uracil	Thymine

SNSCT UNIT IV - BCT