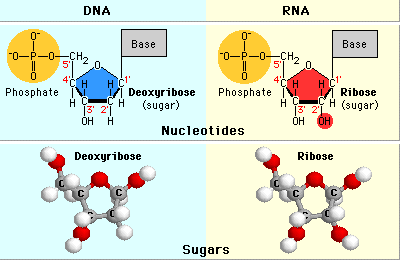
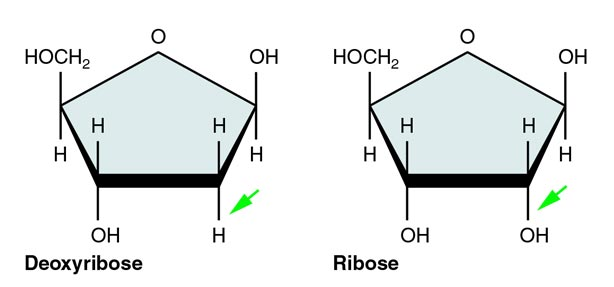
**MOLECULAR BASIS OF INHERITANCE**

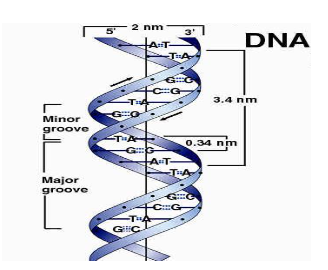




**CHARGAFF'S RULE**

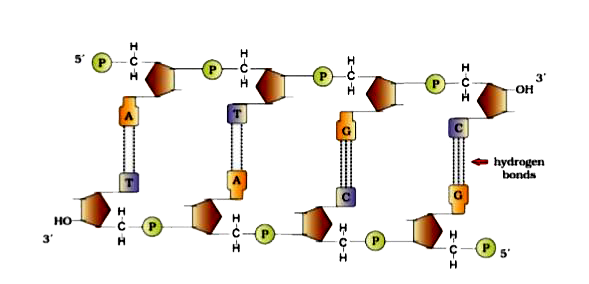
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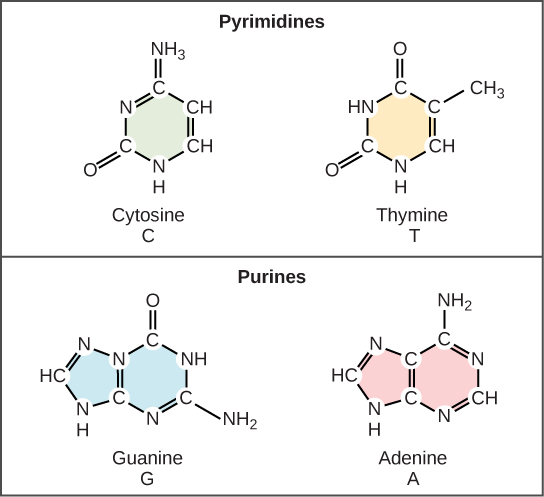
**PITCH OF THE DNA**

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# **Compare the structure of purines and pyrimidines. Can you find out why the distance between two polynucleotide chains in DNA remains almost constant?**

* **Purine and pyrimidine are types of nitrogenous base.**
* **Purines (adenine and guanine) are two-carbon nitrogen ring bases while pyrimidines (cytosine and thymine) are one-carbon nitrogen ring bases.**
* **Two strands of DNA runs anti-parallel and complementary to each other. In those strands Adenine always pairs with Thymine by two hydrogen bonds while Guanine always pairs with Cytosine with three hydrogen bonds.**

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Is the number of nucleotides the same as base pairs?

The nitrogenous base of each nucleotide pairs up (via hydrogen bonds) with the complementary (A with T and G with C) nitrogenous base of the nucleotide on the opposite strand. Thus each base pair involves two nucleotides. So 30,000 base pairs will have 60,000 nucleotides.

On 6 May 1952, at King´s College London in London, England, Rosalind Franklin photographed her fifty-first X-ray diffraction pattern of deoxyribosenucleic acid, or DNA.

Why is the directionality of DNA 5 to 3?

The 5' carbon has a phosphate group attached to it and the 3' carbon a hydroxyl (-OH) group. This asymmetry gives a DNA

A cross between two tall plants resulted in offspring having few dwarf plants. What would be the genotypes of both the parents

# **NEET QUESTION**

# **If Adenine makes 30% of the DNA molecule, what will be the percentage of Thymine, Guanine and Cytosine in it?**

1. T : 20 ; G : 25 ; C : 25
2. T : 20 ; G : 30 ; C : 20
3. T : 20 ; G : 20 ; C : 30
4. T : 30 ; G : 20 ; C : 20

# **In a double stranded DNA molecule, the percentage of cytosine is 18. What would be the percentage of adenine?**

A

36%

B

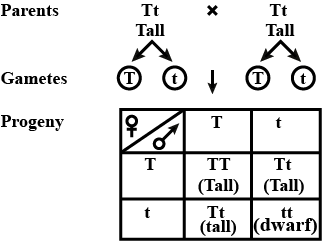
64%

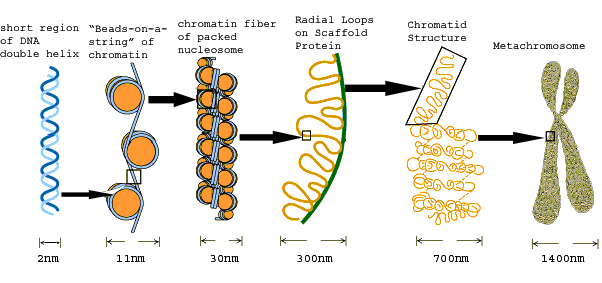
C

32%

D

18%





**How many nucleosomes do humans have?**

**Each human cell contains about 30 million nucleosomes. Nucleosomes are thought to carry epigenetically inherited information in the form of covalent modifications of their core histones.**

**Molecular basis of inheritance**

[**https://www.youtube.com/watch?v=1xXeTccA-\_w**](https://www.youtube.com/watch?v=1xXeTccA-_w)

**Centrifugation**

[**https://www.youtube.com/watch?v=V-CQP5bLD6A**](https://www.youtube.com/watch?v=V-CQP5bLD6A)

**Pour plating**

[**https://www.youtube.com/watch?v=LYF0bXhX5CU**](https://www.youtube.com/watch?v=LYF0bXhX5CU)

**Laminar air flow**

[**https://www.youtube.com/watch?v=IqhmmO\_J6Q4**](https://www.youtube.com/watch?v=IqhmmO_J6Q4)

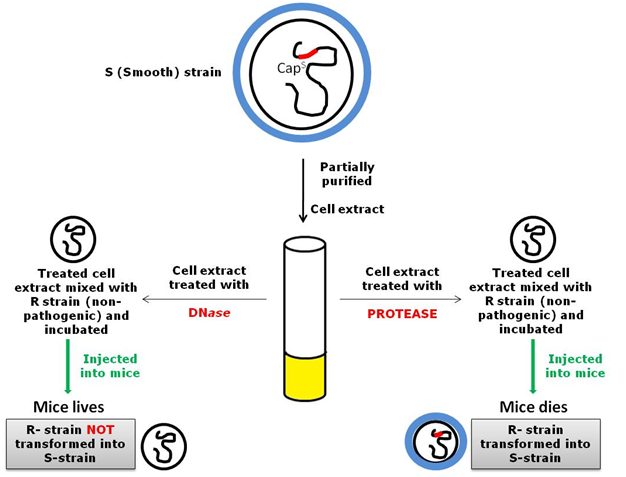
**Pellet and supernatant**

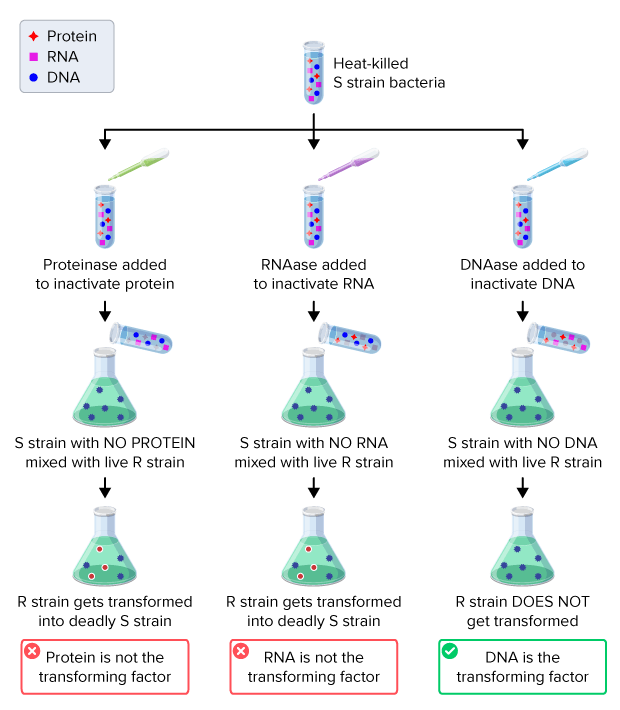
[**https://www.youtube.com/watch?v=p62oXLGTU-c**](https://www.youtube.com/watch?v=p62oXLGTU-c)

**GRIFFITH’S EXPERIMENT**

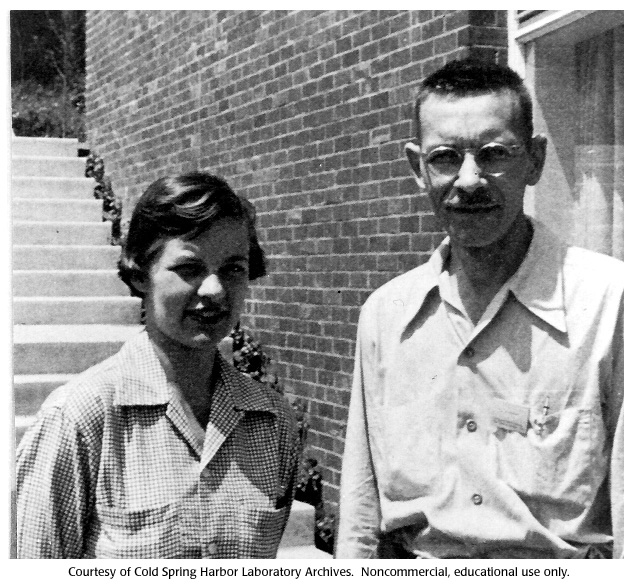
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**AVERY ,MACLEOD AND MCCARTY EXPERIMENT**

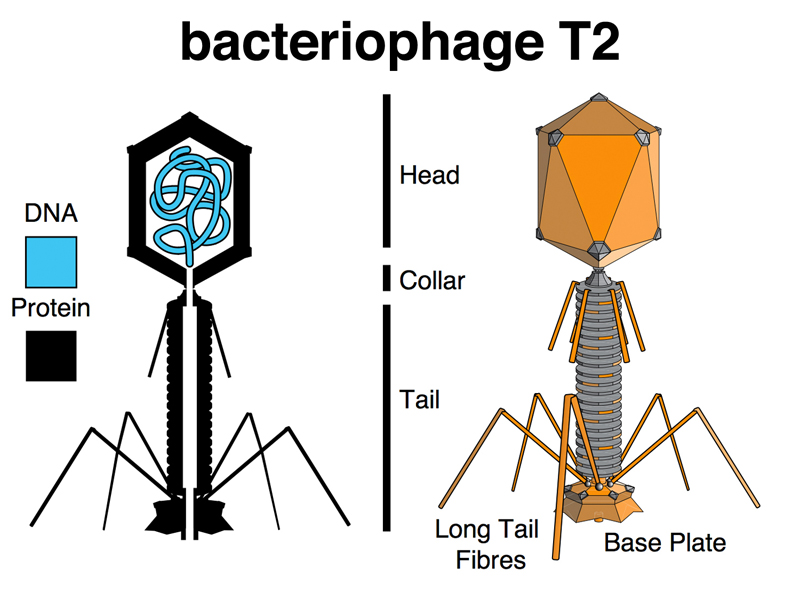
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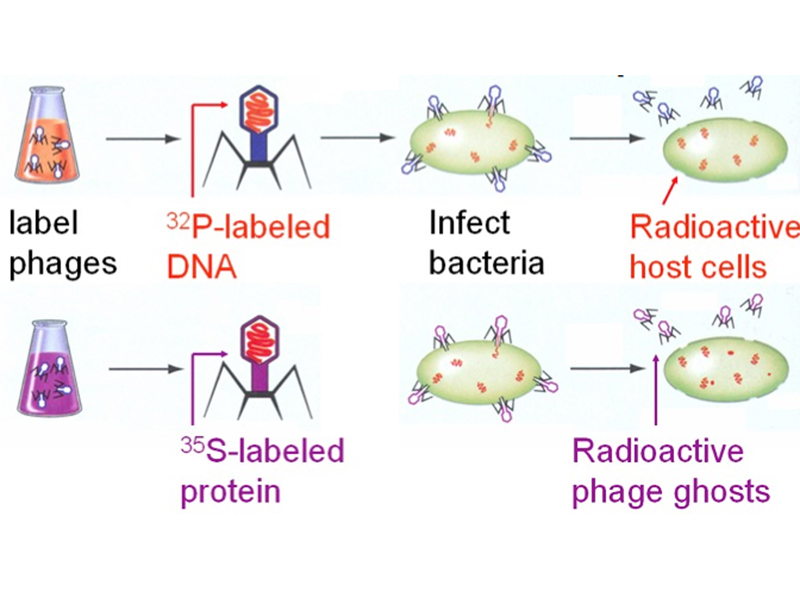
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**ALFRED HERSHEY AND MARTHA CHASE EXPERIMENT**

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[**https://www.youtube.com/watch?v=VZZOJF-5xJE**](https://www.youtube.com/watch?v=VZZOJF-5xJE)

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**DNA REPLICATION**

**https://youtu.be/TNKWgcFPHqw?si=5IfWNxKWuE0-rk41**