Unit - 4.

## DNA as a Genetic material.

Chromosomes - Carriers - Genetic material - Contain - Protein - DNA - RNA.
RNA - most plant viruses - Genetic material.

In 1928 - Frederick Griffith - experiment - on - Diplococcus pneumoniae.

2 Strains - ① Smooth - S strain
② Rough - R strain.

Mouse - S type - died
R type - not died
Killed S strain - mixed with R - died.
Because R - transformed into - S
Phenomenon of changing character of 1 Strain by transfer DNA of another - Transformation

In 1952 - Alfred Hershey and Martha Chase - worked - viruses in bacteria - Bacteriophages - Two different preparation - one - DNA made radioactive - with - $^{32}P$ - other - Protein coat - $^{35}S$. Phage contain - radioactive - DNA - found in bacterial cells - Indicates - DNA - Genetic material.

## Genetic code.

Triplet sequence - of - nucleotides - mRNA - store information - link amino acid - during - Protein synthesis.

George gamow - termed - Genetic code
64 codons - AUG - Initiation codon - UAA, UGA, UAG - Termination or non sense codon.

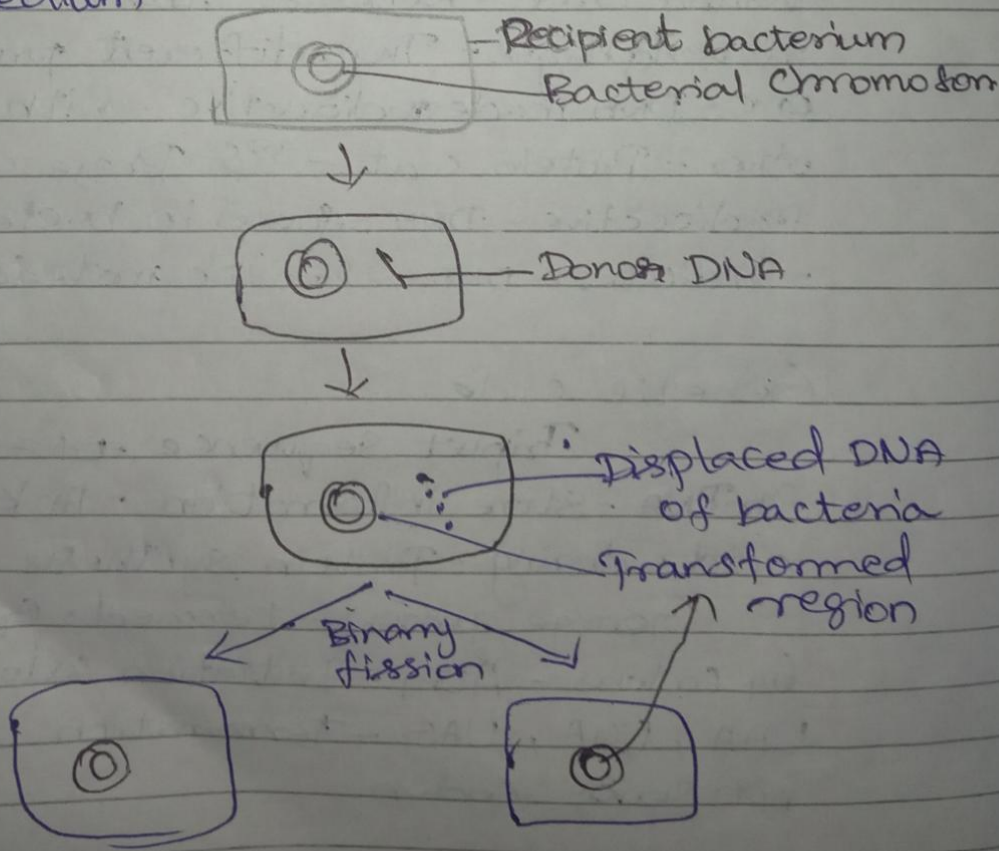
Genetic code - triplet - degenarate - non-overlapping, commaless, non-ambiguous - Universal.

Recombination of bacteria.

Conjugation - exchange - Genetic material - through conjugation tube - b/w - two cells of bacteria.

Joshua lederberg & Edward Tatum - in 1946 - First postulated - E. Coil. - Nobel prize - 1958 - In - bacterial genetics.

Transformation - Fredrick griffith - 1928 - Diplococcus pneumonie - exchange of genetic material - carries genes - ie - DNA - Pass into - recipient - through - Liquid medium



Transduction -

- Special method - Genetic recombination - Genetic material - transferred - from - donor - to - recipient - through - non replicating - bacteriophage - temperate bacteriophage.

Joshua Lederberg & Norton Zinder - 1952 - Research - with - Salmonella typhmurium.

① Specialized transduction
② Generalized transduction.

① Specialized

- The bacteriophage - attached - to - bacterial - cell wall - receptor site - nucleic acid of bacteriophage - transferred - into - Cytoplasm - of - host.

② Generalized.

The phage - DNA - starts - synthesising - new phages - Chromosome of bacterial - cell - fragmented - attached - with DNA.