They took two types of bacteria- one was motile and another was non-motile. The motility determine maleness and femaleness. The motile bacterium behaves like male while the non-motile behaves like female. The motile bacterium comes in contact with non-motile thus physical contact is form. For this pross pili plays important role.

With the help of enzyme the contact wall is dissolved and a thin cytoplasmic tube like structure is formed, known as conjugation tube.

Through the conjugation tube the materials passes from one to another bacterium. With the help of certain enzyme some part of DNA of motile bacteria breaks and passes away through the conjugation tube

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extract of capsulated strain III was, some of the cells of are II variety got transformed to capsulated structure and became virulent means deadly poisenous

✓ Explanation by Griffith :-

He made his experiment as-

i) S type has mucous coating on the surface.
ii) R type is rough due to rough surface.
iii) Griffith injected S type into mice pneumonia disease appeared and mice died.
iv) When R type was injected into mice the mice didn't get the disease hence survived.
v) Griffith again injected heat killed S type into mice the mice didn't get the disease and remained alive due to heating they become ineffective.
vi) After this he injected a mixture of heat killed S type along with live R type.

a)
b)
c)
d)

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The mice suffered from pneumonia and died.
He identified live S bacteria from the dead mice thus it can be said that -

a) live S type + mice → mice died

b) live R type + mice → mice alive.

c) Heat Killed S + mice → mice survived

d) Heat Killed S + live R → mice died (blood of the dead mice showed the presence of live S bacteria)

Thus Griffith conculed that there was some factor known as transforming principle in heat killed 'S' cells that was transferred and it again transformed R cells into the live S cells.

It enabled are R strain to synthesise in smoth polysaccharid coat and become virulent

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The R cells that were transformed into S cells continued producing S cells only.

~~Transjunction~~

3.) Transduction :-

The process of transduction was discovered by 'lederberg and Tatum'. They made their experiment on food poisening bacteria named as bascillus. salmonella.

Q.) Discuss the different stages of DNA replication.

Ans:- Their are following sequences found in replication of DNA -

(i) Origination of Replication :-
The points from where replecation just starts is known as ori or origin. Their are many specetic points in the replecation of DNA known as initiation. Replecation moves foowardly and the forks merge into each other and finally

to the DNA molecule is replicated.

ii) Unwinding of DNA molecule:-
for this purpose the helicose enzyme plays dominant role. It breaks the weak H-bonds but topoisomerase cut and releas the one strand of DNA. Helicos and topoisomerase almost work at some principle.

iii) formation of RNA primer:-
After this RNA primer is formed at DNA template. The formation of complementry strand cannot begin without the formation of an RNA primer.

3. After the formation of RNA Prime new nucleiotide are added with the help of enzyme DNA-polymerase. finally new complemen-tary strand of DNA is formed

Replication firstly proceeds 5°-direction to 3° only in the new DNA strand.

The DNA polymerase can add nucleotides in 5° direction 3° only hence such types of step takes places because the two strands of DNA are in opposit direction means in anti para fashion. means if one is in 5° direction 3° then another is in 3° direction 5°.

DNA polymerase produces continuous stretch in one strand only. it is known as leading strand.

In other strand the DNA polymerase produces short segments of DNA molecules These segments or fragments are known as 'Okazaki fragments' and the strand is known as 'lagging strand'.

The short fragments or 'okazaki segment' are again joined together by another enzyme known as DNA lygase.

Proof reading:-

Proof reading and DNA repair-. During the process of replicati n accuracy of base pairing essential even then error takes place it may be one in ten thousand which is finally rectified by removing the wrong base and replacing the correct one. it occurs by repair enzyme. Proof reading ensures the formation of identical DNA strands