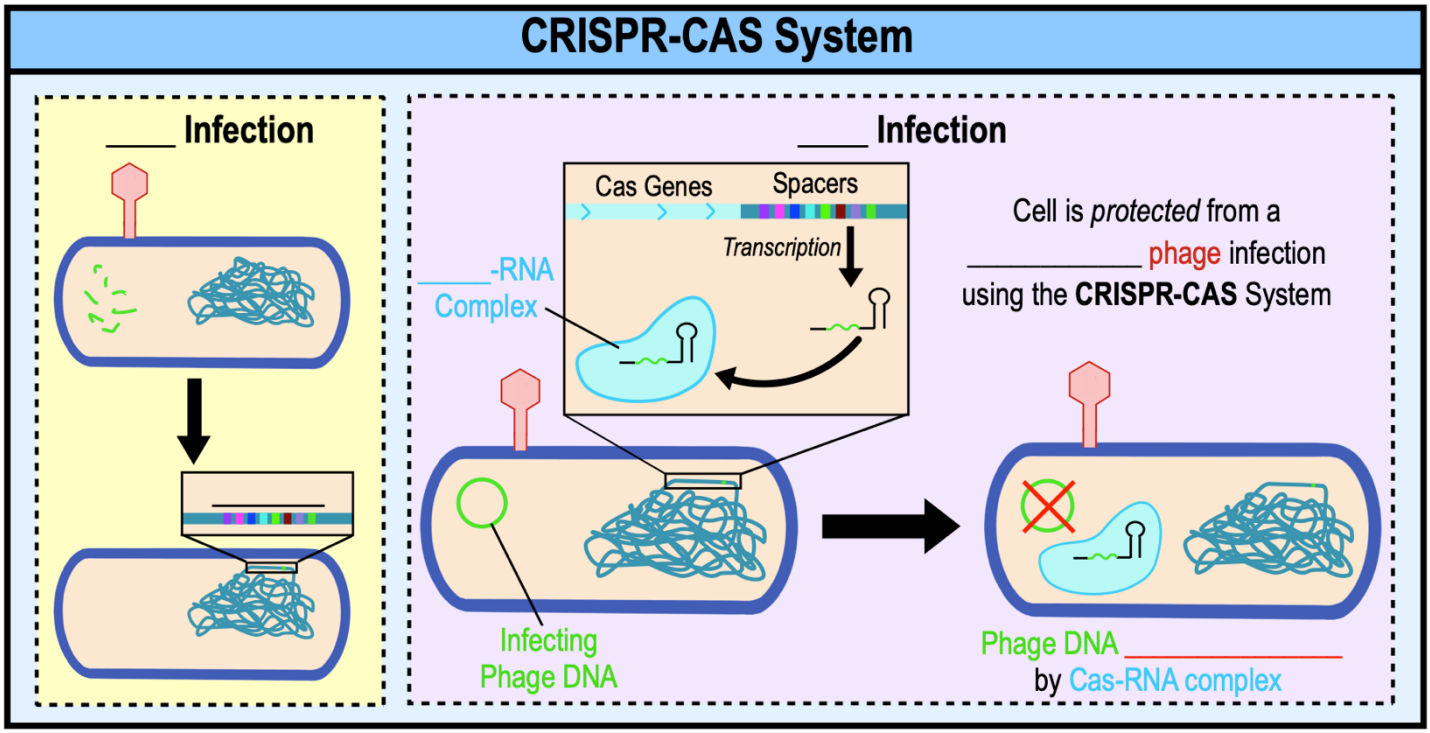
**CONCEPT:** CRISPR CAS

- _____**-CAS System:** bacterial cell defense mechanism against various *phage* infections.
  - □ CRISPR stands for: ___*lusters of* ___*egularly* ___*nterspersed* ___*hort* ___*alindromic* ___*epeats.*
- Protects cell from infections it once encountered by storing pieces of _____ DNA in the chromosome called *spacers*.
  - □ Protein complex in the cell _____ phage DNA into fragments.
  - □ Phage DNA fragments in the chromosome act as a record of *previous* phage infections.
- During a phage infection, the cell _____ the fragments of various phage DNA.
  - □ Transcribed RNA forms a complex with an enzyme (Cas).
  - □ Cas-RNA complex *targets* infecting phage DNA & cuts it to _____ phage.




**PRACTICE:** What is CRISPR?

a) Sequences of bacterial DNA derived from viral DNA fragments.
b) A gene editing tool.
c) A bacterial defense mechanism against viral infections.
d) All of the above.

**PRACTICE:** The enzyme which targets phage (viral) DNA and destroys it before it can infect the bacterial cell is known as?

a) Cas.
b) CRISPR.
c) Spacer.
d) Phage.