

Name: _____

Date: _____

Block: _____

Viruses – 1

What is a Virus?

- A _____ is a _____ particle made up of _____
_____ and _____ that can invade living cells.
- The name “virus” comes from the Latin word meaning _____.
- At the end of the 19th century, the _____ virus discovered was called the _____.

Structure of a Virus

- A typical virus is made up of outer _____ **capsid** and inner _____
_____ core.
 1. **Core** - either _____ or _____ but never both.
 2. _____ - protects the nucleic acid core.
- Some viruses steal a portion of the cell’s membrane as an outer layer called an _____.
- *Parts of a virus:*

Structure of a Bacteriophage

- A _____ is a virus that ONLY infects _____.
 - A bacteriophage has a _____ region (composed of a capsid), a nucleic acid core and a _____.
 - The _____ are used by the virus to attach to the bacteria.

Virus have many shapes:

- _____ or _____ – Example: T4 bacteriophage.
- _____ - Example: Tobacco mosaic virus.
- _____ - Example: Adenovirus and Influenza.

- *Examples of a few different viruses:*

Influenza (Enveloped)	Bacteriophage (Complex)
Tobacco mosaic virus (Helical)	Adenovirus (Polyhedral)

Virus Reproduction

- There are 4 MAIN STEPS to **viral reproduction**:
 - 1) Virus _____ to cell and nucleic acid enters cell – injects DNA/RNA into cell.
 - 2) _____ parts – nucleic acid, capsid, envelope = Synthesis
 - 3) _____ new viruses from parts.
 - 4) _____ or viral release from infected cell.
- Viruses infect bacteria by the _____ cycle or _____ cycle

A) LYTIC CYCLE

- Causes the disease _____
- Steps of the lytic cycle:
 - 1) Bacteriophage tail fibers _____ to the surface of a bacterium.
 - 2) Virus inserts its DNA into the _____ cell.
 - a. Bacterium cell cannot tell the _____ between its own DNA and the DNA of the virus.

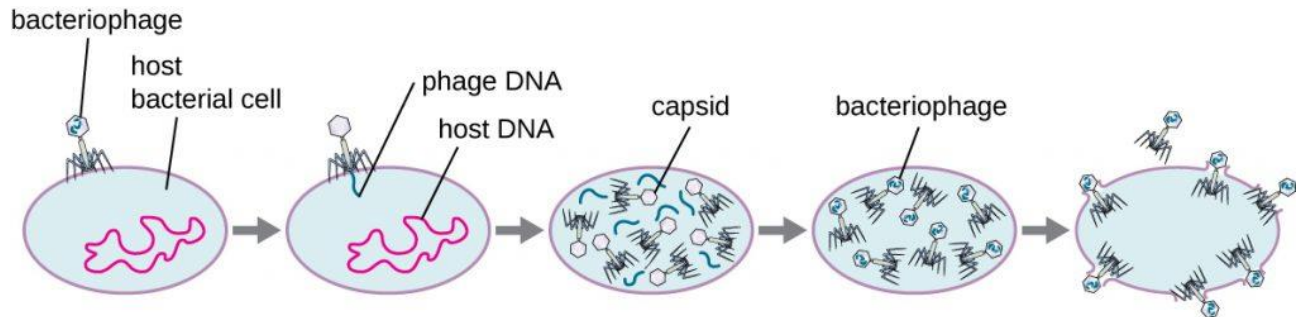
3) Virus uses materials of the bacterium cell to _____ of its own protein coat and DNA

4) New viruses _____.

5) Infected cell _____ (**lyses**), releasing them new viruses that may infect other cells.

• Examples of lytic viruses: _____, _____, _____.

• Diagram of the lytic cycle:



B) LYSOGENIC CYCLE

• Lysogenic cycle: sometimes a virus doesn't kill host cell right away or immediately cause the disease – it may _____ with the host for a period of time.

• Steps of the lysogenic cycle:

1) Virus inserts its DNA into the _____ of the bacterium cell.

2) Genetic material is inserted into the _____.

3) Viral genes go _____ for an undetermined length of time, but are copied with the host cell's DNA without warning

4) The cell will _____ into the lytic cycle, releasing many viruses.

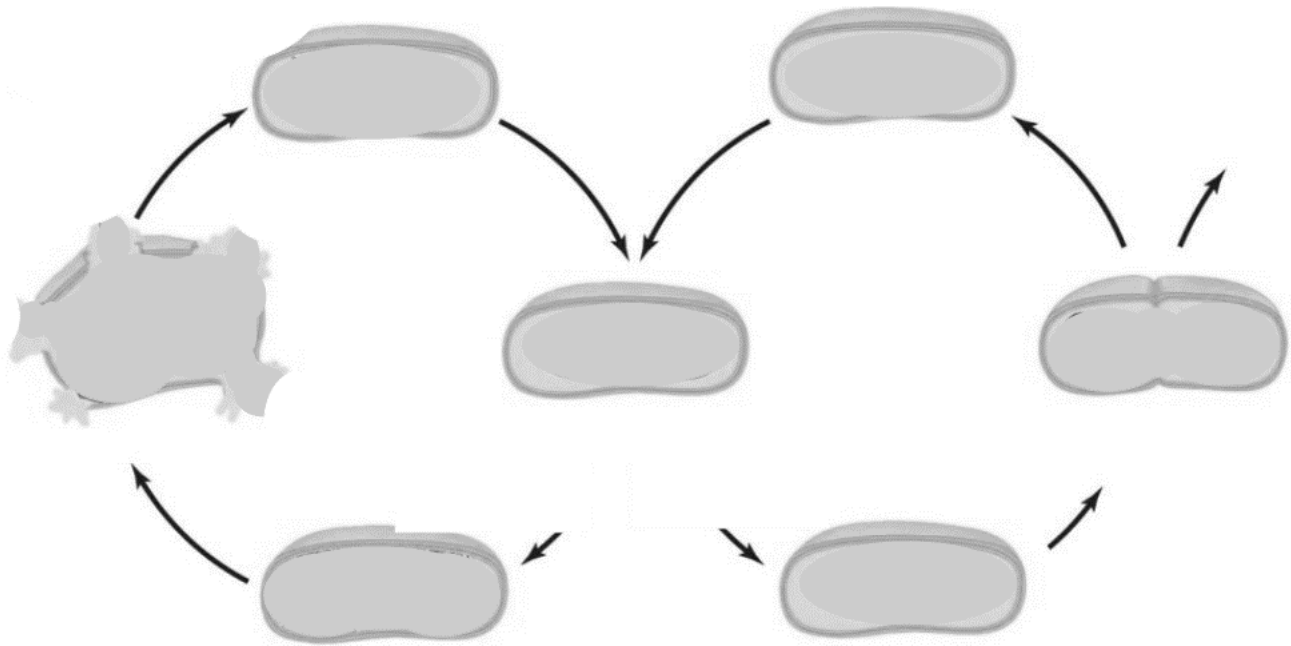
a. Factors that can activate the virus:

i. a. Sudden changes in _____

ii. b. Availability of _____

• Examples of lysogenic viruses: _____, _____, _____

- Diagram of the lytic & lysogenic cycle:



Retroviruses

- Have _____ as nucleic acid.
- Which modern, devastating disease is caused by a retrovirus? _____
- What is the virus called? _____

