

CHAPTER 19 STUDY QUESTIONS – Viruses (p. 381-394)

1) Describe the general **structure** and **size** of a virus. **Sketch & label** the shape of the T4 bacteriophage.

2) What kind of nucleic acids are viral genomes made of?

3) Describe the function and general structure of:

- **CAPSID:**

- **VIRAL ENVELOPE:**

4) Define **HOST RANGE**. How is the host range of a particular virus determined?

5) Summarize the 4 steps of the simplified viral reproductive cycle. (see fig. 19.4)

6) Define the following terms:

- **VIRULENT PHAGE:**

- **TEMPERATE PHAGE:**

- **PROPHAGE**

7) How do bacteria defend themselves against phages (2 methods)? (see p. 385 under Lytic Cycle)

8) In the chart below, briefly compare the sequence of events and ultimate outcome, between the 2 modes of viral infection: LYTIC and LYSOGENIC.

| LYTIC CYCLE – events & outcome | LYSOGENIC CYCLE – events & outcome |
|--------------------------------|------------------------------------|
| | |

9) Describe the reproductive cycle of HIV, a retrovirus. (include the role of the enzyme **reverse transcriptase**)

10) Describe two ways in which a viral infection leads to disease symptoms.

11) What are vaccines? What are five diseases for which vaccines have been developed?

12) Why are antibiotics ineffective against viral infection?

13) What are the three processes that contribute to the emergence of viral diseases?

14) Which human cancers have been linked to viruses?

15) Summarize the two major routes in which plant viruses are spread.

16) Explain the following terms and provide an example of a plant or animal disease caused by each:

- **VIROIDS:**

- **PRIONS:**

17) Label the following diagram showing the **replicative cycle of HIV**, a typical retrovirus. (see fig. 19.8)

