

## Viruses Worksheet

Name \_\_\_\_\_

Date \_\_\_\_\_

Directions: Answer each of the following questions. Each number is worth one point.

1. In your own words, explain why viruses are not living organisms.

2. List 3 diseases caused by viruses.

3. Define vaccine.

4. How are viruses transmitted?

5. Define symptom.

6-7. Why do vaccines NOT protect against all viral diseases? Give an example.

8-10. If an epidemic were declared in our town, what could happen to control and eventually eliminate it?

11. If you opened a virus, what would find?

12. Where does viral reproduction occur?

13-16. Do you think a virus can be grown in a nutrient agar as bacteria are? Why or Why not?

17-18. Explain why antibiotics work against bacteria but not viruses.

19. How can a vaccine protect you against a disease?

20. Who invented the first polio vaccine?

**\*BONUS\*** (ONE POINT) What is the best defense against most viral diseases?

## Viruses Worksheet - Answer Key

Name \_\_\_\_\_

Date \_\_\_\_\_

Directions: Answer each of the following questions. Each number is worth one point.

1. In your own words, explain why viruses are not living organisms. **Viruses are not made of cells; they cannot make proteins by themselves; and they cannot use energy.**

2. List 3 diseases caused by viruses. **Polio, chicken pox, measles, rabies, mumps, influenza, smallpox, hepatitis, yellow fever, AIDS, and Ebola.**

3. Define vaccine. **Preparation of killed or weakened pathogens introduced into the body to produce immunity.**

4. How are viruses transmitted? **Viruses can be transmitted by a bite of an infected animal, contaminated food, water, blood products or hypodermic needles, airborne, mosquitoes, sexual contact, and blood or other body fluids.**

5. Define symptom. Give an example. **A symptom is evidence of a disease, such as a rash, fever, paralysis, headache, aches, swollen glands, and congestion.**

6-7. Why do vaccines NOT protect against all viral diseases? Give an example.

Vaccination is effective only against viruses with nonvarying proteins on their surfaces. If the surface proteins mutate often the new changes are not recognized by the immune system. Examples: Colds, Flu, and HIV

8-10. If an epidemic were declared in our town, what could happen to control and eventually eliminate it? The virus must be identified; route of transmission must be determined in order to prevent spread of the disease; quarantine must be established if necessary; types of treatment and medication must be evaluated, selected, and applied.

11. If you opened a virus, what would find? A core of genetic material (RNA or DNA) surrounded by a protein coat.

12. Where does viral reproduction occur? Viral reproduction occurs in a host cell.

13-16. Do you think a virus can be grown in a nutrient agar as bacteria are? Why or Why not? **It cannot be grown in a nutrient agar. Viruses cannot carry out the cellular functions necessary for growth. They can only reproduce in the cells of living tissues.**

17-18. Explain why antibiotics work against bacteria but not viruses. **Antibiotics interfere with cellular processes that do not occur in viruses.**

19. How can a vaccine protect you against a disease? **A vaccine stimulates the immune system to respond against specific nonself molecules. When you are exposed to a virus an effective response is made.**

20. Who invented the first polio vaccine? **Jonas Salk**

**\*BONUS\*** (one point) What is the best defense against most viral diseases? **The best defense against most viral diseases is a healthy immune system.**