Bacteria & Virus Unit
Review

MULTIPLE CHOICE

1. Which of the following characteristics is common to both bacteria and viruses?
   a. contain genetic material
   b. can be killed using antibiotics
   c. have a cell membrane
   d. have a protein coat

2. Which statement is true about viruses?
   a. Viruses can eat and metabolize food.
   b. Viruses can reproduce only using a host cell.
   c. Viruses can reproduce on their own at any time.
   d. Viruses contain DNA, so they are alive.

3. Prokaryotic cells differ from eukaryotic cells by:
   a. prokaryotic cells are living and eukaryotic cells are non-living.
   b. prokaryotic cells lack a true nucleus and membrane bound organelles.
   c. prokaryotic cells are much larger than eukaryotic cells.
   d. prokaryotic cells require oxygen and eukaryotic cells do not.

4. One important way to control the spread of viruses is through (circle all that apply)
   a. the use of vaccines.
   b. proper hand washing.
   c. the use of other types of bacteria.
   d. the use of antibiotics.

5. What type of cells contain a true nucleus?
   a. bacterial cells
   b. virus cells
   c. prokaryotic cells
   d. eukaryotic cells

6. One of the differences between bacteria and viruses is that:
   a. viruses are living and bacteria are non-living
   b. bacteria are living and viruses are non-living
   c. viruses are biotic and bacteria are abiotic
   d. viruses are prokaryotic and bacteria are eukaryotic

7. Which of the following microscopic organisms is the smallest?
   a. bacteria
   b. fungi
   c. protists
   d. viruses
8. Why are viruses not considered living organisms?
   a. Viruses can only be seen with an electron microscope.
   b. Viruses cannot make their own nutrients.
   c. Viruses do not contain genetic material.
   d. Viruses are not made up of cells.

9. Which of these is characteristic of both viruses and bacteria?
   a. They get their energy from their environment.
   b. They can reproduce on their own.
   c. They can form crystals and become dormant.
   d. They contain proteins and nucleic acids.

10. A bacterium reproduces asexually by dividing to form two new bacterial cells. What is the name of the process by which bacteria reproduce?
    a. meiosis
    b. mitosis
    c. budding
    d. binary fission

11. Which of the following is a risk of overusing antibiotics to treat infections?
    a. Bacteria may become resistant to the antibiotics.
    b. Antibiotics increase the rate of infection.
    c. Antibiotics cause other diseases to develop.
    d. Antibiotics only work once.

12. Bacteria are classified by which of the following shapes?
    a. rod, cone, spiral
    b. rod, sphere, spiral
    c. rod, sphere, cone
    d. sphere, cone, spiral

13. Which of the following bacteria live in a hot environment?
    a. *Escheria coli*
    b. *Thermophilus pyrodiium*
    c. *Enterobacillum*
    d. *Halophile didicus*

14. Which of the following statements accurately describes the difference between the way bacteria cause diseases and the way that viruses cause diseases?
    a. Both bacteria and viruses use host cells to reproduce, but viruses kill the host cell immediately, while bacteria maintain life within the host cell indefinitely.
    a. Bacteria only cause disease by entering the body through the blood stream and infecting a host cell, and viruses only cause disease by entering through air passages.
    c. Bacteria cause disease by incorporating their DNA into the host's DNA, and viruses cause disease by incorporating their RNA in the host's RNA.
    d. Bacteria are living cells that grow and reproduce in the body and produce toxins or damage tissues they grow in. Viruses use host cells to reproduce, and these host cells usually die when newly produced virus particle are released.

**FILL IN THE BLANK**

15. What is a protective covering that some bacteria form for protection under harsh conditions? ____________

16. The outer protein coat of a virus is called what? ____________
17. Bacteria that make their own food by obtaining their energy from chemical molecules to make food, rather than obtaining energy from the sun are called what? ________________________________

18. Photoautotrophs use what process to make their own food? ________________________________

19. _________________________ bacteria release enzymes that breakdown food around them so they can absorb/eat the nutrients from it.

20. _________________________ bacteria are chemoautotrophs that convert nitrogen for plant use.

21. E. coli is a bacterium with short, thin, hair-like projections called _______. These can help it stick to other cells.

22. Bacteria that cause botulism may survive in canned food for long periods because the bacteria may form ___________ that help them survive harsh conditions.

23. The coating around a virus is made of ____________.

24. Both bacteria and eukaryotic cells have DNA, however, bacteria do not have a ________________.

25. The process by which a dead or disabled pathogen (or proteins from that pathogen) is introduced into the body so that an immune response results without an actual infection is called? ___________________________

26. A viral _____________ means a virus’ DNA has been incorporated with a host cell’s DNA, this is a result of the lysogenic cycle.

27. The _____________ cycle results in a host cell lysing and releasing thousands of new viruses.

28. _____________ is the process of using high heat to kill bacteria.

29. What kingdom do gram positive bacteria belong in? _____________________________

30. How many classification taxa are there for virus’? _________

31. Binary Fission is the reproduction of ________________________________.

32. Some bacteria can be useful for making ______________ and medicine.

33. _________________________ are used to help fight off a bacterial infection.

**TRUE/FALSE**

_____ 34. Virus’ can only reproduce inside living things.

_____ 35. Viruses are considered cellular organisms.

_____ 36. Bacteria have both a cell membrane and a cell wall.

_____ 37. Viruses can contain DNA/RNA.

_____ 38. Archaebacteria are gram positive.

_____ 39. Gram positive bacteria turn purple.

_____ 40. Bacteria that break down dead plants/animals are called decomposers.
MATCHING

41. Label the appropriate bacterial shapes:
   a. Cocci  b. Bacilli  c. Spirillum

   _______________             _______________   _______________

42. Label the appropriate viral shapes:
   a. Polyhedron  b. Spherical  c. Helical  d. Complex

   ___________        _____________        ____________   _______________

43. Match the domain with the appropriate kingdom:
   a. Bacteria  b. Archae

      _______ Eubacteria

      _______ Archaebacteria

44. Label each kingdom according to what it is used to classify. Write B for bacteria and V or virus:

   _____ Domain

   _____ Kingdom

   _____ Phylum

   _____ Class

   _____ Order

   _____ Family

   _____ Genus

   _____ species
45. Label the parts of a bacteria.

46. Label the parts of a virus.

47. Label the different pathogen reproduction cycles.

   a. Lytic   b. Lysogenic   c. Binary Fission