Test Prep Pretest

1. g
2. m
3. b
4. i
5. l
6. j
7. a
8. h
9. d
10. k
11. f
12. c
13. e
14. Transformation
15. host cell
16. DNA, RNA
17. prions
18. vaccine
19. pili, conjugation
20. chemoautotrophic
21. glycoprotein, host cell
22. envelope
23. Once inside the cell, the viral enzyme reverse transcriptase makes a DNA copy of the virus's RNA. Using the cell's gene transcription and translation machinery, the viral DNA then directs the production of thousands of new viruses. The new viruses are released by budding out of the host cell.
24. *E. coli* reproduces by binary fission, a process by which a single cell divides into two identical new cells.
25. (1) The pathogen must be in an animal with the disease, but not in a healthy animal. (2) The pathogen must be isolated from the sick animal and grown in a laboratory culture. (3) The isolated pathogen must cause the disease when injected into a healthy animal. (4) The pathogen must be isolated from the second animal, grown in a laboratory, and shown to be the same as the original pathogen. Biologists use Koch's postulates to identify pathogens.

Quiz

SECTION: BACTERIA

1. b
2. e
3. a
4. d
5. c
6. f
7. a
8. a
9. d
10. b

SECTION: VIRUSES

1. c
2. d
3. f
4. a
5. b
6. e
7. b
8. b
9. d
10. c

SECTION: BACTERIA, VIRUSES, AND HUMANS

1. c
2. c
3. b
4. d
5. d
6. c
7. 3
8. 2
9. 4
10. 1

Chapter Test (Basic)

1. c
2. c
3. b
4. c
5. b
6. a
7. a
8. b
9. b
10. a
11. c
12. c
13. a
14.c
15. e
16. f
17. d
18. b
19. a
20. a
21. d
22. c
23. b
24. e
25. f

Chapter Test (General)

1. d
2. c
3. b
4. c
5. d
6. a
7. d
8. b
9. a
10. a
11. b
12. d
13. c
14. e
15. h
16. g
17. b
18. f
19. d
20. l
21. i
22. a
23. j
24. K

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Chapter Test (Advanced)

1. a
2. b
3. d
4. c
5. b
6. c
7. d
8. c
9. c
10. d
11. d
12. d
13. b
14. b
15. f
16. e
17. c
18. d
19. a

20. Mutations for resistance to an antibiotic arise naturally. When that antibiotic is present, the vulnerable bacteria are killed. Resistant bacteria survive, reproduce, and become the dominant type in the population.
21. Diseases can emerge when they spread to a new host or a new area, when environmental conditions change, or when a decline in vaccination occurs.
22. Some viruses have toxic parts, such as envelope proteins; the virus may cause the host cell to make toxins; body tissues may be damaged; and the body may respond to infection by causing fever and aches.
23. Although viruses contain DNA or RNA, they are not considered living because they do not grow, do not maintain homeostasis, and do not metabolize. Viruses cause disease in many living organisms and therefore have a major impact on the living world.
24. Bacteria have one of two types of cell walls that can be distinguished by means of Gram staining: Gram-negative (appear pink after staining) and Gram-positive (appear purple after staining). The two groups of bacteria differ in their susceptibility to different antibiotics. Therefore, it is important in medicine to be able to distinguish one group from the other.
25. Bacteria store some toxins in their cells. The toxins, which are poisonous to eukaryotic cells, are released into host tissues when the bacteria die and cause the host to become ill. Other toxins are secreted into the bacterial environment, such as a food in which bacteria are growing. Humans who eat food contaminated with bacterial toxins can become ill.
26. Microorganism D is the pathogen causing the disease. When Koch's postulates are followed, the pathogen is able to be isolated from a dead animal and grown in a pure culture. The pathogen causes the disease when inoculated into a healthy animal. The pathogen is then able to be isolated from the inoculated animal and identified to be the same as the original pathogen.

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