

Student: _____

1. Disease-causing microorganisms are called:
 - A. decomposers
 - B. procaryotes
 - C. pathogens
 - D. eucaryotes
 - E. fermenters
2. The microorganisms that recycle nutrients by breaking down dead matter and wastes are called:
 - A. decomposers
 - B. procaryotes
 - C. pathogens
 - D. eucaryotes
 - E. fermenters
3. The microorganisms that do *not* have a nucleus in their cells are called:
 - A. decomposers
 - B. procaryotes
 - C. pathogens
 - D. eucaryotes
 - E. fermenters
4. When humans manipulate the genes of microorganisms the process is called:
 - A. bioremediation
 - B. genetic engineering
 - C. epidemiology
 - D. immunology
 - E. taxonomy
5. Which of the following is *not* considered a microorganism?
 - A. mosquito
 - B. protozoa
 - C. bacteria
 - D. viruses
 - E. fungi
6. All microorganisms are best defined as organisms that:
 - A. cause human disease
 - B. lack a cell nucleus
 - C. are infectious particles
 - D. are too small to be seen with the unaided eye
 - E. can only be found growing in laboratories
7. Which activity is an example of biotechnology?
 - A. bacteria in the soil secreting an antibiotic to kill competitors
 - B. a microbiologist using the microscope to study bacteria
 - C. Egyptians using moldy bread on wounds
 - D. *Eschericia coli* producing human insulin
 - E. public health officials monitoring diseases in a community

8. Which of the following is a unique characteristic of viruses that distinguishes them from the other major groups of microorganisms?
 - A. cause human disease
 - B. lack a nucleus
 - C. cannot be seen without a microscope
 - D. contain genetic material
 - E. lack cell structure
9. The Dutch merchant who made and used quality magnifying lenses to see and record microorganisms was:
 - A. Francesco Redi
 - B. Antonie van Leeuwenhoek
 - C. Louis Pasteur
 - D. Joseph Lister
 - E. Robert Koch
10. Pasteur used swan-neck flasks in his experiments to prove that:
 - A. air had "vital forces" capable of spontaneous generation
 - B. air was necessary for life
 - C. dust in air was a source of living microorganisms
 - D. microorganisms could cause disease
 - E. microorganisms could be grown in laboratory infusions
11. Which of the following is *not* a process in the scientific method?
 - A. belief in a preconceived idea
 - B. formulate a hypothesis
 - C. systematic observation
 - D. laboratory experimentation
 - E. development of a theory
12. Experimentation:
 - A. is designed to refute hypothesis
 - B. is designed to support hypothesis
 - C. provides a means to gather subjective data
 - D. provides a means to gather objective data
 - E. is the first step in the scientific method
13. Spontaneous generation is the belief that:
 - A. germs cause infectious diseases
 - B. microbes are diverse and ubiquitous
 - C. microbes placed in an infusion can grow in it
 - D. aseptic techniques reduce microbes in medical settings
 - E. living things arise from nonliving matter
14. Koch's postulates are criteria used to establish that:
 - A. microbes are found on dust particles
 - B. a specific microbe is the cause of a specific disease
 - C. life forms can only arise from preexisting life forms
 - D. a specific microbe should be classified in a specific kingdom
 - E. microbes can be used to clean up toxic spills
15. Which of the following is a taxon that contains all the other taxa listed?
 - A. species
 - B. phylum
 - C. kingdom
 - D. genus
 - E. family

16. Which of the following is a scientific name?
- A. Gram positive streptococcus
 - B. staphlococcus
 - C. *Streptococcus pyogenes*
 - D. Anthrax
 - E. streptobacilli
17. Taxonomy does *not* involve:
- A. nomenclature
 - B. classification
 - C. taxa
 - D. identification
 - E. common name
18. The smallest and most significant taxon is:
- A. genus
 - B. species
 - C. kingdom
 - D. family
 - E. phylum
19. The study of evolutionary relationships among organisms is called:
- A. biotechnology
 - B. genetics
 - C. recombinant DNA
 - D. phylogeny
 - E. taxonomy
20. A scientist studying the sequence of nucleotides in the rRNA of a bacterial species is working on:
- A. determining evolutionary relatedness
 - B. bioremediation
 - C. recombinant DNA
 - D. nomenclature
 - E. determining if that species is the cause of a new disease
21. A scientist discovers a new microbial species. It is a single-celled eucaryote without cell walls. In which kingdom will it likely be classified?
- A. Monera
 - B. Protista
 - C. Fungi
 - D. Animalia
 - E. Plantae
22. Dr. Michael Zasloff's research on magainins derived from African clawed frogs is an example of working in the field of:
- A. food microbiology
 - B. epidemiology
 - C. agricultural microbiology
 - D. genetic engineering
 - E. biotechnology
23. Helminths are:
- A. bacteria
 - B. protozoa
 - C. molds
 - D. parasitic worms
 - E. infectious particles

24. All of the following pertain to photosynthesis *except*:
- A. occurs only in members of the kingdom Plantae
 - B. carbon dioxide is converted to organic material
 - C. contributes to the oxygen content in the atmosphere
 - D. fueled by light
 - E. important to each ecosystem's flow of energy and food
25. Organisms called parasites are:
- A. always classified in the kingdom Monera
 - B. always harmful to their host
 - C. the decomposers in ecosystems
 - D. always a virus
 - E. free-living
26. The surgeon who advocated using disinfectants on hands and in the air prior to surgery was:
- A. Joseph Lister
 - B. Ignaz Semmelweis
 - C. Robert Koch
 - D. Louis Pasteur
 - E. Antonie van Leeuwenhoek
27. Sterile refers to:
- A. pathogen free
 - B. absence of spores
 - C. absence of any life forms
 - D. pasteurized
 - E. homogenized
28. Which scientist showed that anthrax was caused by the bacterium, *Bacillus anthracis*?
- A. Joseph Lister
 - B. Ignaz Semmelweis
 - C. Robert Koch
 - D. Louis Pasteur
 - E. Antonie van Leeuwenhoek
29. Select the correct descending taxonomic hierarchy (left to right):
- A. family, order, class
 - B. family, genus, species
 - C. genus, species, family
 - D. class, phylum, order
 - E. kingdom, domain, phylum
30. When assigning a scientific name to an organism:
- A. the species name is capitalized
 - B. the species name is placed first
 - C. the species name can be abbreviated
 - D. both genus and species names are capitalized
 - E. both genus and species names are italicized or underlined
31. The scientist/s that proposed organisms be assigned to one of 3 domains is/are:
- A. Robert Koch and Louis Pasteur
 - B. Antonie van Leeuwenhoek
 - C. Carl Woese and George Fox
 - D. Robert Whittaker
 - E. Francesco Redi

32. In Whittaker's system, the protozoa and algae are classified in the kingdom:
- A. Monera
 - B. Protista
 - C. Mycetae
 - D. Plantae
 - E. Animalia
33. Which kingdom does *not* contain any eucaryotes?
- A. Monera
 - B. Protista
 - C. Mycetae
 - D. Plantae
 - E. Animalia
34. The scientific field called _____ is involved in the identification, classification, and naming of organisms.
- A. nomenclature
 - B. taxonomy
 - C. phylogeny
 - D. Wosean classification
 - E. none of the choices are correct
35. _____ is the area of biology that states that living things undergo gradual structural and functional changes over long periods of time.
- A. morphology
 - B. phylogeny
 - C. evolution
 - D. genetics
 - E. none of the choices are correct
36. Living things ordinarily too small to be seen with the unaided eye are termed _____.
- A. bacteria
 - B. viruses
 - C. parasites
 - D. microorganisms
 - E. none of the choices are correct
37. _____ are the group of microorganisms composed only of hereditary material wrapped in a protein covering.
- A. viruses
 - B. bacteria
 - C. parasites
 - D. fungi
 - E. yeasts
38. 38 A scientist that constructs a hypothesis and then tests its validity by outlining predicted events of the hypothesis followed by experiments to test for those events is using the _____ approach.
- A. Koch
 - B. scientific method
 - C. spontaneous generation
 - D. taxonomic
 - E. none of the choices are correct
39. Which branch of microbiology deals with host microbe interactions?
- A. biotechnology
 - B. genetic engineering
 - C. food microbiology
 - D. immunology
 - E. all of the choices are correct

40. The first prokaryotes appeared ____ billion years ago.
A. 5
B. 4
C. 3
D. 2
E. 1
41. The scientific method includes all of the following except:
A. hypothesis
B. experimentation
C. observation
D. control group
E. theory
42. This scientist finally disproved spontaneous generation.
A. Redi
B. Jablot
C. Pasteur
D. Koch
E. Lister
43. Members of the same species share many more characteristics compared to those shared by members of the same kingdom.
True False
44. Viruses are not classified in any of Whittaker's 5 kingdoms.
True False
45. Members of the kingdom Fungi are photosynthetic.
True False
46. A scientist studying helminths is working with bacteria.
True False
47. The fossil record has established that procaryotes existed on earth for approximately 2 billion years before eucaryotes appeared.
True False
48. It has been over 25 years since a new infectious disease has emerged in the world.
True False
49. The term sterile means free of all life forms.
True False
50. All microorganisms are parasites.
True False
51. During a scientific experiment, the control group is used to directly test or measure the consequences of a variable in the study.
True False
52. The scientific method involves formulating a tentative explanation, called the hypothesis, to account for what has been observed or measured.
True False
53. Once an organism is assigned to a particular taxonomic hierarchy, it is permanent and cannot be revised.
True False

54. A hypothesis must be tested before it can be considered a theory.
True False
55. The names of the three proposed Domains are: Bacteria, Protista, Eukarya.
True False
56. One distinguishing characteristic of the archaebacteria is that they live in extreme environments.
True False
57. Discuss what might be three different beneficial consequences and three different detrimental consequences of killing all microorganisms on the earth.

58. Discuss five of the reasons why infectious diseases are increasing in number around the world.

59. Discuss why SARS was such a major world health problem in such a short period of time.

1 Key

1. Disease-causing microorganisms are called:
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B. procaryotes
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Cowan - 001 Chapter... #1

Cowan - 001 Chapter... #2

Cowan - 001 Chapter... #3

Cowan - 001 Chapter... #4

Cowan - 001 Chapter... #5

Cowan - 001 Chapter... #6

Cowan - 001 Chapter... #7

8. Which of the following is a unique characteristic of viruses that distinguishes them from the other major groups of microorganisms?
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 - D. contain genetic material
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Cowan - 001 Chapter... #8

9. The Dutch merchant who made and used quality magnifying lenses to see and record microorganisms was:
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 - B. Antonie van Leeuwenhoek**
 - C. Louis Pasteur
 - D. Joseph Lister
 - E. Robert Koch

Cowan - 001 Chapter... #9

10. Pasteur used swan-neck flasks in his experiments to prove that:
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Cowan - 001 Chapter... #10

11. Which of the following is *not* a process in the scientific method?
- A. belief in a preconceived idea**
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 - C. systematic observation
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 - E. development of a theory

Cowan - 001 Chapter... #11

12. Experimentation:
- A. is designed to refute hypothesis
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Cowan - 001 Chapter... #12

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Cowan - 001 Chapter... #13

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Cowan - 001 Chapter... #14

15. Which of the following is a taxon that contains all the other taxa listed?
- A. species
 - B. phylum
 - C. kingdom**
 - D. genus
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Cowan - 001 Chapter... #15

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 - B. staphlococcus
 - C. Streptococcus pyogenes**
 - D. Anthrax
 - E. streptobacilli

Cowan - 001 Chapter... #16

17. Taxonomy does *not* involve:
- A. nomenclature
 - B. classification
 - C. taxa
 - D. identification
 - E. common name**

Cowan - 001 Chapter... #17

18. The smallest and most significant taxon is:
- A. genus
 - B. species**
 - C. kingdom
 - D. family
 - E. phylum

Cowan - 001 Chapter... #18

19. The study of evolutionary relationships among organisms is called:
- A. biotechnology
 - B. genetics
 - C. recombinant DNA
 - D. phylogeny**
 - E. taxonomy

Cowan - 001 Chapter... #19

20. A scientist studying the sequence of nucleotides in the rRNA of a bacterial species is working on:
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Cowan - 001 Chapter... #20

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 - B. Protista**
 - C. Fungi
 - D. Animalia
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Cowan - 001 Chapter... #21

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 - C. agricultural microbiology
 - D. genetic engineering
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Cowan - 001 Chapter... #22

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 - B. protozoa
 - C. molds
 - D. parasitic worms**
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Cowan - 001 Chapter... #23

24. All of the following pertain to photosynthesis *except*:
- A. occurs only in members of the kingdom Plantae**
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Cowan - 001 Chapter... #24

25. Organisms called parasites are:
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 - D. always a virus
 - E. free-living

Cowan - 001 Chapter... #25

26. The surgeon who advocated using disinfectants on hands and in the air prior to surgery was:
- A. Joseph Lister**
 - B. Ignaz Semmelweis
 - C. Robert Koch
 - D. Louis Pasteur
 - E. Antonie van Leeuwenhoek

Cowan - 001 Chapter... #26

27. Sterile refers to:
- A. pathogen free
 - B. absence of spores
 - C. absence of any life forms**
 - D. pasteurized
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Cowan - 001 Chapter... #27

28. Which scientist showed that anthrax was caused by the bacterium, *Bacillus anthracis*?
- A. Joseph Lister
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 - C. Robert Koch**
 - D. Louis Pasteur
 - E. Antonie van Leeuwenhoek

Cowan - 001 Chapter... #28

29. Select the correct descending taxonomic hierarchy (left to right):
- A. family, order, class
 - B. family, genus, species**
 - C. genus, species, family
 - D. class, phylum, order
 - E. kingdom, domain, phylum

Cowan - 001 Chapter... #29

30. When assigning a scientific name to an organism:
- A. the species name is capitalized
 - B. the species name is placed first
 - C. the species name can be abbreviated
 - D. both genus and species names are capitalized
 - E. both genus and species names are italicized or underlined**

Cowan - 001 Chapter... #30

31. The scientist/s that proposed organisms be assigned to one of 3 domains is/are:
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 - B. Antonie van Leeuwenhoek
 - C. Carl Woese and George Fox**
 - D. Robert Whittaker
 - E. Francesco Redi

Cowan - 001 Chapter... #31

32. In Whittaker's system, the protozoa and algae are classified in the kingdom:
- A. Monera
 - B. Protista**
 - C. Mycetae
 - D. Plantae
 - E. Animalia

Cowan - 001 Chapter... #32

33. Which kingdom does *not* contain any eucaryotes?
- A. Monera**
 - B. Protista
 - C. Mycetae
 - D. Plantae
 - E. Animalia

Cowan - 001 Chapter... #33

34. The scientific field called _____ is involved in the identification, classification, and naming of organisms.
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 - C. phylogeny
 - D. Wosean classification
 - E. none of the choices are correct

Cowan - 001 Chapter... #34

35. _____ is the area of biology that states that living things undergo gradual structural and functional changes over long periods of time.
- A. morphology
 - B. phylogeny
 - C. evolution**
 - D. genetics
 - E. none of the choices are correct

Cowan - 001 Chapter... #35

36. Living things ordinarily too small to be seen with the unaided eye are termed _____.
A. bacteria
B. viruses
C. parasites
D. microorganisms
E. none of the choices are correct

Cowan - 001 Chapter... #36

37. _____ are the group of microorganisms composed only of hereditary material wrapped in a protein covering.
A. viruses
B. bacteria
C. parasites
D. fungi
E. yeasts

Cowan - 001 Chapter... #37

38. 38 A scientist that constructs a hypothesis and then tests its validity by outlining predicted events of the hypothesis followed by experiments to test for those events is using the _____ approach.
A. Koch
B. scientific method
C. spontaneous generation
D. taxonomic
E. none of the choices are correct

Cowan - 001 Chapter... #38

39. Which branch of microbiology deals with host microbe interactions?
A. biotechnology
B. genetic engineering
C. food microbiology
D. immunology
E. all of the choices are correct

Cowan - 001 Chapter... #39

40. The first prokaryotes appeared ____ billion years ago.
A. 5
B. 4
C. 3
D. 2
E. 1

Cowan - 001 Chapter... #40

41. The scientific method includes all of the following except:
A. hypothesis
B. experimentation
C. observation
D. control group
E. theory

Cowan - 001 Chapter... #41

42. This scientist finally disproved spontaneous generation.
A. Redi
B. Jablot
C. Pasteur
D. Koch
E. Lister

Cowan - 001 Chapter... #42

43. Members of the same species share many more characteristics compared to those shared by members of the same kingdom.
TRUE
44. Viruses are not classified in any of Whittaker's 5 kingdoms.
TRUE
45. Members of the kingdom Fungi are photosynthetic.
FALSE
46. A scientist studying helminths is working with bacteria.
FALSE
47. The fossil record has established that procaryotes existed on earth for approximately 2 billion years before eucaryotes appeared.
TRUE
48. It has been over 25 years since a new infectious disease has emerged in the world.
FALSE
49. The term sterile means free of all life forms.
TRUE
50. All microorganisms are parasites.
FALSE
51. During a scientific experiment, the control group is used to directly test or measure the consequences of a variable in the study.
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52. The scientific method involves formulating a tentative explanation, called the hypothesis, to account for what has been observed or measured.
TRUE
53. Once an organism is assigned to a particular taxonomic hierarchy, it is permanent and cannot be revised.
FALSE
54. A hypothesis must be tested before it can be considered a theory.
TRUE
55. The names of the three proposed Domains are: Bacteria, Protista, Eukarya.
FALSE
56. One distinguishing characteristic of the archaebacteria is that they live in extreme environments.
TRUE
57. Discuss what might be three different beneficial consequences and three different detrimental consequences of killing all microorganisms on the earth.
Answers will vary.

Cowan - 001 Chapter... #43

Cowan - 001 Chapter... #44

Cowan - 001 Chapter... #45

Cowan - 001 Chapter... #46

Cowan - 001 Chapter... #47

Cowan - 001 Chapter... #48

Cowan - 001 Chapter... #49

Cowan - 001 Chapter... #50

Cowan - 001 Chapter... #51

Cowan - 001 Chapter... #52

Cowan - 001 Chapter... #53

Cowan - 001 Chapter... #54

Cowan - 001 Chapter... #55

Cowan - 001 Chapter... #56

Cowan - 001 Chapter... #57

58. Discuss five of the reasons why infectious diseases are increasing in number around the world.

Answers will vary.

Cowan - 001 Chapter... #58

59. Discuss why SARS was such a major world health problem in such a short period of time.

Answers will vary.

Cowan - 001 Chapter... #59

1 Summary

<u>Category</u>	<u># of Question</u>
	<u>Σ</u>
Cowan - 001 Chapter...	59