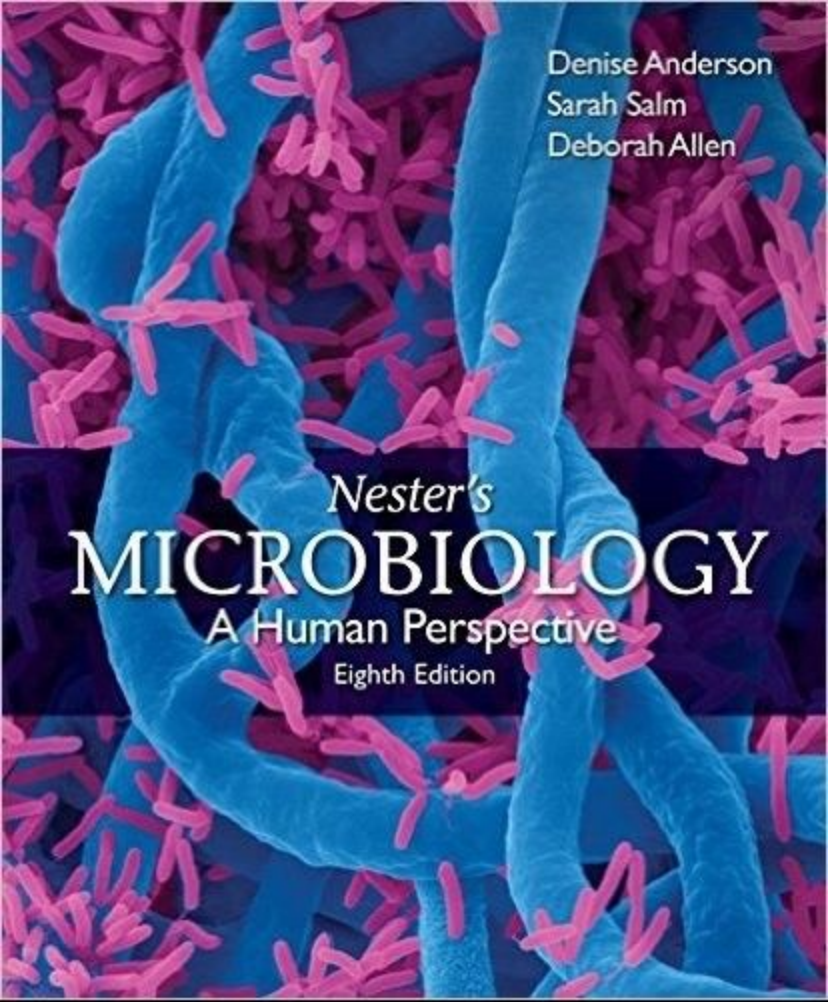
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Nester's
MICROBIOLOGY
A Human Perspective
Eighth Edition

TEST BANK

Chapter 01
Humans and the Microbial World

Multiple Choice Questions

1. The scientist usually considered the first to see microorganisms, which he called "animalcules", was

A.

Redi.

B.

van Leeuwenhoek.

C.

Pasteur.

D.

Tyndall.

Bloom's Level: 1. Remember
Learning Outcome: 01.01
Section: 01.01
Topic: History of Microbiology

2. The word "animalcule" was coined by
A. Pasteur.
B. van Leeuwenhoek.
C. Redi.
D. Tyndall.

Bloom's Level: 1. Remember
Learning Outcome: 01.01
Section: 01.01
Topic: History of Microbiology

3.

The idea of spontaneous Generation postulated that

A. organisms could evolve into the next generation of organisms.
B. organisms could spontaneously combust.
C. organisms could spontaneously arise from other living organisms.
D. living organisms could spontaneously arise from non-living material.

Bloom's Level: 2. Understand
Learning Outcome: 01.01
Section: 01.01
Topic: History of Microbiology

4. Which of these scientist(s) was/were involved in, among other things, investigating the idea of spontaneous generation?
A. Redi
B. van Leeuwenhoek
C. Pasteur
D. Escherich
E. Redi AND Pasteur

Bloom's Level: 1. Remember
Learning Outcome: 01.01
Section: 01.01
Topic: History of Microbiology

5. The work of Tyndall and Cohn
A. supported the idea of spontaneous generation.
B. was used to explain why others investigating spontaneous generation had obtained results that were opposite of those obtained by Pasteur.
C. showed that microbes caused disease.
D. allowed scientists to see microorganisms.

Bloom's Level: 2. Understand
Learning Outcome: 01.01
Section: 01.01
Topic: History of Microbiology

6.

The structures present in the hay infusions used in experiments on spontaneous generation that made them difficult to sterilize are

A. chlorophyll.
B. toxins.
C. organelles.
D. endospores.

Bloom's Level: 1. Remember
Learning Outcome: 01.01
Section: 01.01
Topic: History of Microbiology

7. The opposite results obtained by scientists apparently doing the same experiments in investigating spontaneous generation
A. shows the importance of repeating experiments.
B. shows the importance of exactly duplicating experimental conditions.
C. led to further experiments that ultimately furthered knowledge.
D. All of the choices are correct.

Bloom's Level: 2. Understand
Learning Outcome: 01.01
Section: 01.01
Topic: History of Microbiology

8.

If while investigating spontaneous generation, Pasteur had his laboratory located in a stable

A. the results would, most likely, have supported the idea of spontaneous generation.
B. the results would, most likely, have not supported the idea of spontaneous generation.
C. this would have had no effect on his results.
D. this would have shown his love of horses.

Bloom's Level: 3. Apply
Learning Outcome: 01.01
Section: 01.01
Topic: History of Microbiology

9. Cellulose is a major component of plants and is only directly digested by
A. herbivores.
B. carnivores.
C. termites.
D. microorganisms.

Bloom's Level: 2. Understand
Learning Outcome: 01.02
Section: 01.02
Topic: Environmental Microbiology

10. Plants are dependent on microorganisms for
A. providing oxygen.
B. providing water.
C. changing atmospheric nitrogen to a usable form.
D. providing carbohydrates.

Bloom's Level: 2. Understand
Learning Outcome: 01.02
Section: 01.02
Topic: Environmental Microbiology

11. Microorganisms are involved in
A. causing disease.
B. curing/treating disease.
C. preparing food.
D. cleaning up pollutants.
E. All of the choices are correct.

Bloom's Level: 2. Understand
Learning Outcome: 01.03
Section: 01.02
Topic: Applied and Industrial Microbiology

12. Bacteria have been used to help produce or modify food products
A. for several thousand years.
B.

since the Middle Ages.

C. since the late 1800s.
D. since the 1950s.

Bloom's Level: 1. Remember
Learning Outcome: 01.03
Section: 01.02
Topic: Applied and Industrial Microbiology

13. Microorganisms are involved in
A. production of medicinal products.
B. transforming atmospheric nitrogen to a form useful to plants.
C. food production.
D. pollution cleanup.
E. All of the choices are correct.

Bloom's Level: 2. Understand
Learning Outcome: 01.03
Section: 01.02
Topic: Applied and Industrial Microbiology

14. Bioremediation refers to
A. rehabilitating wayward bacteria.
B. using bacteria to clean up pollutants.
C. vaccine development.
D. monitoring newly discovered disease organisms.

Bloom's Level: 1. Remember
Learning Outcome: 01.03
Section: 01.02
Topic: Applied and Industrial Microbiology

15. The Golden Age of Medical Microbiology
A. occurred during the late 1800s to early 1900s.
B. started in the 1990s with the advent of genetic engineering.
C. is a time when the knowledge of and techniques to work with bacteria blossomed.
D. was when people realized that diseases could be caused by invisible agents.
E. occurred during the late 1800s to early 1900s, is a time when the knowledge of and techniques to work with bacteria blossomed AND was when people realized that diseases could be caused by invisible agents.

Bloom's Level: 1. Remember
Learning Outcome: 01.04
Section: 01.02
Topic: History of Microbiology

16.

Newly emerging or reemerging diseases

A. may be due to changing lifestyles.
B.

are exemplified by Lyme disease and toxic shock syndrome.

C. may reflect a breakdown in sanitation/social order.
D. may be related to global cooling.
E.

may be due to changing lifestyles, are exemplified by Lyme disease and toxic shock syndrome, AND may reflect a breakdown in sanitation/social order.

Bloom's Level: 2. Understand
Learning Outcome: 01.04
Section: 01.02
Topic: Infection and Disease

17.

Lyme disease is an example of a disease

A. that is due to a greater degree of interaction between humans and tick-carrying animals.
B. that is due to a decline in vaccinations.
C. that is due to a mutation in the human genome.
D. that is due to climate change leading to a greater mosquito population.

Bloom's Level: 2. Understand
Learning Outcome: 01.04
Section: 01.02
Topic: Infection and Disease

18. The outbreak of measles within the last few years was due to
A. mutation of the virus.
B. change in the environment.
C. a decline in vaccination of children in the previous years.
D. increase in sensitivity of detection techniques.

Bloom's Level: 2. Understand
Learning Outcome: 01.04
Section: 01.02
Topic: Infection and Disease

19. Smallpox
A. has been eliminated as a naturally occurring infection in human beings.
B.

still occasionally occurs in third world countries.

C. probably only had a human reservoir.
D. was dealt with by vaccination.
E. has been eliminated as a naturally occurring infection in human beings, AND was dealt with by vaccination.

Bloom's Level: 2. Understand
Learning Outcome: 01.04
Section: 01.02
Topic: History of Microbiology

20. Smallpox
A.

aided European domination of new world nations.

B. has not occurred naturally anywhere in the world since 1977.
C. has potential as a weapon of bioterrorism.
D. has killed millions of people.
E. All of the choices are correct.

Bloom's Level: 1. Remember
Learning Outcome: 01.04
Section: 01.02
Topic: History of Microbiology

21. Diseases such as ulcers and cardiovascular disease
A. have been shown to be, or may be due to, a bacterial infection.
B. are solely due to lifestyle.
C. are solely due to genetics.
D. are due to new mutations in bacteria.

Bloom's Level: 2. Understand
Learning Outcome: 01.04
Section: 01.02
Topic: Infection and Disease

22. Bacteria are useful to study because
A. they produce protein in a similar manner to more complex organisms.
B. they replicate DNA in a similar manner to more complex organisms.
C. they produce energy in a similar manner to more complex organisms.
D. they are grown quickly, easily, and cheaply.
E. All of the choices are correct.

Bloom's Level: 2. Understand
Learning Outcome: 01.05
Section: 01.03
Topic: Tools and Methods of Culturing, Classifying, and Identify Microorganisms

23. Bacteria
A. are not found on our bodies.
B. are only found on small select parts of our bodies.
C.

provide protection to us from disease by covering our bodies, crowding out "bad" invading bacteria.

D. always cause disease when growing on our bodies.

Bloom's Level: 2. Understand
Learning Outcome: 01.04
Section: 01.02
Topic: History of Microbiology

24. Bacteria are present on the body
A. only during disease-causing infections.
B. constantly.
C. only in certain restricted areas.
D. never.

Bloom's Level: 1. Remember
Learning Outcome: 01.04
Section: 01.02
Topic: Infection and Disease

25. Bacteria are good models to use because they
A. are large in size.
B. share many biochemical/physiological properties with more complicated organisms.
C. can be assembled into multicellular organisms.
D. have complicated growth requirements.

Bloom's Level: 2. Understand
Learning Outcome: 01.05
Section: 01.03
Topic: Microbial Growth and Nutrition

26.

Which is usually true of bacteria?

A. They are found as rods, spheres, or spirals.
B. They reproduce by binary fission.
C. They contain rigid cell walls made of peptidoglycan.
D. They are found as single cells.
E. All of the choices are correct.

Bloom's Level: 1. Remember
Learning Outcome: 01.06
Section: 01.03
Topic: Prokaryotes

27.

Which is usually true of archaea?

A. They are found as rods, spheres, or spirals.
B. They reproduce by binary fission.
C. They contain rigid cell walls.
D. They are found as single cells.
E. All of the choices are correct.

Bloom's Level: 1. Remember
Learning Outcome: 01.06
Section: 01.03
Topic: Prokaryotes

28.

Which is not usually true of archaea?

A. They are found as rods, spheres, or spirals.
B. They reproduce by binary fission.
C. They contain rigid cell walls.
D. They are found as single cells.
E. They contain peptidoglycan as part of their cell walls.

Bloom's Level: 1. Remember
Learning Outcome: 01.06
Section: 01.03
Topic: Prokaryotes

29.

Some archaea are commonly found in

A. meteors.
B. boiling hot springs.
C. the Great Salt Lake.
D. your refrigerator.
E. boiling hot springs AND the Great Salt Lake.

Bloom's Level: 1. Remember
Learning Outcome: 01.06
Section: 01.03
Topic: Prokaryotes

30.

The cell types that lack a membrane-bound nucleus are found in the

A. eukaryotes.
B. prokaryotes.
C. archaea.
D. protista.
E. prokaryotes AND archaea.

Bloom's Level: 1. Remember
Learning Outcome: 01.06
Section: 01.03
Topic: Prokaryotes

31. The prokaryotic cell scheme is found in

A.

bacteria.

B.

archaea.

C.

eucarya.

D. All of the choices are correct.

E.

bacteria AND archaea.

Bloom's Level: 1. Remember
Learning Outcome: 01.06
Section: 01.03
Topic: Prokaryotes

32. Eucarya
A. consist of only multicellular organisms.
B.

have a more complex internal structure than archaea or bacteria.

C.

have a simpler internal structure than archaea or bacteria.

D. have a membrane around the DNA.
E.

have a more complex internal structure than archaea or bacteria AND have a membrane around the DNA.

Bloom's Level: 2. Understand
Learning Outcome: 01.06
Section: 01.03
Topic: Eukaryotes

33. Which group(s) below contain single-celled and multicellular organisms?
A.

Algae

B.

Fungi

C.

Protozoa

D. All of the choices are correct.
E.

Algae AND Fungi

Bloom's Level: 2. Understand
Learning Outcome: 01.07
Section: 01.03
Topic: Eukaryotes

34. Organisms
A. may be classified in four domains.
B. may be classified in three domains.
C. probably do not have a common ancestor.
D. have never shared genes between domains.
E.

may be classified in three domains, probably do not have a common ancestor, AND have never shared genes between domains.

Bloom's Level: 1. Remember
Learning Outcome: 01.06
Section: 01.03
Topic: Tools and Methods of Culturing, Classifying, and Identify Microorganisms

35. The system by which organisms are named is referred to as
A. systematics.
B. naming.
C. nomenclature.
D. cladistics.

Bloom's Level: 1. Remember
Learning Outcome: 01.08
Section: 01.03
Topic: Tools and Methods of Culturing, Classifying, and Identify Microorganisms

36. The scientific name of an organism includes its
A. family and genus.
B. first name and last name.
C. genus and species.
D. domain.
E. genus and species AND domain.

Bloom's Level: 1. Remember
Learning Outcome: 01.08
Section: 01.03
Topic: Tools and Methods of Culturing, Classifying, and Identify Microorganisms

37. Which is/are the correct form(s)?
A. Staphylococcus aureus
B. *Staphylococcus aureus*
C. *staphylococcus aureus*
D. *S. aureus*
E. *Staphylococcus aureus* AND *S. aureus*

Bloom's Level: 3. Apply
Learning Outcome: 01.08
Section: 01.03
Topic: Tools and Methods of Culturing, Classifying, and Identify Microorganisms

38. Which of these may pertain to the term strain?
A. *E. coli* 0157:H7
B. *E. coli*
C.

Minor variation of a species

D.

Major variation of a species

E. *E. coli* 0157:H7 AND minor variation of a species

Bloom's Level: 2. Understand
Learning Outcome: 01.08
Section: 01.03
Topic: Tools and Methods of Culturing, Classifying, and Identify Microorganisms

39. Viroids
A. are naked (lacking a protein shell) pieces of RNA.
B. are naked (lacking a protein shell) pieces of DNA.
C. are known to cause neurodegenerative diseases in animals.
D. are composed of protein encasing DNA.
E. are known to cause neurodegenerative diseases in animals AND are composed of protein encasing DNA.

Bloom's Level: 1. Remember
Learning Outcome: 01.09
Section: 01.04
Topic: Viruses

40. Outside a cell, viruses are
A. running a small number of biochemical reactions.
B. synthesizing proteins necessary for entry into the host.
C. inactive.
D. constructing a cell membrane known as an envelope.
E. running a small number of biochemical reactions AND synthesizing proteins necessary for entry into the host.

Bloom's Level: 2. Understand
Learning Outcome: 01.09
Section: 01.04
Topic: Viruses

41. Viruses may only be grown
A. in sterile, cell-free chemical growth media.
B. in living cells.
C. at body temperature.
D. in darkness.

Bloom's Level: 3. Apply
Learning Outcome: 01.09
Section: 01.04
Topic: Viruses

42. Viruses are in the group

A.

viridaeae.

B.

eukarya.

C.

archaea.

D.

bacteria.

E. None of the choices is correct.

Bloom's Level: 1. Remember
Learning Outcome: 01.09
Section: 01.04
Topic: Viruses

43. Viruses

A. are obligate intracellular parasites.
B. are single-celled organisms.
C. consist of only proteins.
D.

are in the Domain *Archaea*.

E. are obligate intracellular parasites AND are single-celled organisms.

Bloom's Level: 2. Understand
Learning Outcome: 01.09
Section: 01.04
Topic: Viruses

44. Viruses are often referred to as
A. infectious agents.
B. eubacteria.
C. archaebacteria.
D. cellular agents.

Bloom's Level: 1. Remember
Learning Outcome: 01.09
Section: 01.04
Topic: Viruses

45.

Viruses, viroids, and prions all

A. operate intracellularly.
B. may be considered acellular agents of disease.
C. contain DNA.
D. infect only animals.
E. operate intracellularly AND may be considered acellular agents of disease.

Bloom's Level: 2. Understand
Learning Outcome: 01.09
Section: 01.04
Topic: Viruses

46. Both viruses and viroids are
A. capable of independent reproduction.
B. obligate intracellular parasites.
C. interdependent with one another for reproduction.
D. larger than most bacteria in size.

Bloom's Level: 2. Understand
Learning Outcome: 01.09
Section: 01.04
Topic: Viruses

47. Prions
A. are only composed of RNA.
B. are only composed of DNA.
C. are only composed of protein.
D. cause diseases in plants.
E. are only composed of RNA AND cause diseases in plants.

Bloom's Level: 1. Remember
Learning Outcome: 01.09
Section: 01.04
Topic: Viruses

48. The smallest organism is probably determined by
A. the number of molecules necessary for its growth and replication.
B. the size of the molecules necessary for its growth and replication.
C. its membrane.
D. its volume.
E. the number of molecules necessary for its growth and replication AND the size of the molecules necessary for its growth and replication.

Bloom's Level: 3. Apply
Learning Outcome: 01.10
Section: 01.05
Topic: Tools and Methods of Culturing, Classifying, and Identify Microorganisms

49. A new organism was found that was unicellular and 1 cm long. The "large" size of this organism alone would
A. mean that it could not be a bacterium.
B. mean that it had to be a protista.
C. mean little.
D.

mean that it had to be in the domain eukarya.

Bloom's Level: 2. Understand
Learning Outcome: 01.10
Section: 01.05
Topic: Tools and Methods of Culturing, Classifying, and Identify Microorganisms

50. Although it is said that the twentieth century was the Age of Physics, it is predicted that the twenty-first century will be the age of
A. chemistry.
B. computers.
C. microbial biodiversity.
D. mathematics.

Bloom's Level: 2. Understand
Learning Outcome: 01.05
Section: 01.03
Topic: Microbial World

True / False Questions

51. Spontaneous generation referred to the idea that organisms came from other organisms.
FALSE

Bloom's Level: 1. Remember
Learning Outcome: 01.01
Section: 01.01
Topic: History of Microbiology

52. The human body only contains bacteria during illness.
FALSE

Bloom's Level: 2. Understand
Learning Outcome: 01.04
Section: 01.02
Topic: Infection and Disease

53.

Bacteria and eukarya both contain membrane-bound organelles.

FALSE

Bloom's Level: 1. Remember
Learning Outcome: 01.06
Section: 01.03
Topic: Eukaryotes

54. The scientific name of an organism indicates its domain.
FALSE

Bloom's Level: 1. Remember
Learning Outcome: 01.08
Section: 01.03
Topic: Tools and Methods of Culturing, Classifying, and Identify Microorganisms

55. Viroids are naked (lacking a protein shell) pieces of DNA that infect plants.
FALSE

Bloom's Level: 2. Understand
Learning Outcome: 01.09
Section: 01.04
Topic: Viruses

56.

Viruses simultaneously contain DNA, RNA, and protein.

FALSE

Bloom's Level: 1. Remember
Learning Outcome: 01.09
Section: 01.04
Topic: Viruses

57. Viruses, viroids, and prions are obligate intracellular agents.
TRUE

Bloom's Level: 2. Understand
Learning Outcome: 01.09
Section: 01.04
Topic: Viruses

58. Viruses and bacteria are both based on the unit of a cell.
FALSE

Bloom's Level: 1. Remember
Learning Outcome: 01.09
Section: 01.04
Topic: Viruses

59. The size of an organism determines its domain.
FALSE

Bloom's Level: 2. Understand
Learning Outcome: 01.10
Section: 01.05
Topic: Microbial World

60.

Archaea are very similar to bacteria and have rigid cell walls made of peptidoglycan.

FALSE

Bloom's Level: 1. Remember
Learning Outcome: 01.06
Section: 01.03
Topic: Prokaryotes

61.

Thiomargarita namibiensis could not be a eukaryote because it is only 1 mm in width.

FALSE

Bloom's Level: 2. Understand
Learning Outcome: 01.10
Section: 01.05
Topic: Prokaryotes

Multiple Choice Questions

62.

HIV/AIDS can be categorized as a new or emerging infectious disease. By putting it into this category, we are effectively saying that

A. this infection hasn't been observed in the human population prior to recent (approximately 50 years or sooner) outbreaks.
B. this disease has been in susceptible populations for centuries, but has only recently achieved infection levels that became detectable.
C. the infectious agent is still evolving and changing, unlike with older, more established diseases such as plague or polio.
D. the disease has always been in susceptible populations and causing disease, but we lacked the technology to detect it.

Bloom's Level: 3. Apply
Learning Outcome: 01.04
Section: 01.02
Topic: Infection and Disease

63.

An illness outbreak occurs in New York City birds in the late 1990s. After a lengthy scientific investigation, the Centers for Disease Control (CDC) determine that the agent causing the birds to die is the West Nile virus. Outbreaks of this illness have been observed in several other countries in Asia and the Middle East across the last 50 years, but not in the United States. With this information, what would be the best categorization of this infectious agent/disease

A.

This is clearly a reemerging infection. It's been around for a long time, and it is reappearing in a susceptible population again.

B.

This is clearly a nosocomial infection. It's transmitted from animals to human beings in urban environments.

C. This is clearly an emerging infection. It hasn't been around that long, and it has made a jump across continents into a new susceptible population.

D.

This is clearly not a concern to human beings--maybe it's emerging in animals, maybe it's reemerging, maybe it's nosomial. But who cares? It's only in birds.

Bloom's Level: 4. Analyze
Learning Outcome: 01.04
Section: 01.02
Topic: Infection and Disease

64. Why are we concerned at all with monitoring emerging/reemerging diseases?
A. These represent growing threats to human health that will require new scientific research and resources to effectively combat.
B.

Because globalization (greater trade and travel between countries) leads to more chances for spread of illnesses into new areas and populations. Monitoring these illnesses will help us to protect people.

C.

Because the speed of travel has increased greatly. With increased speed of travel, it is far more likely that a serious pathogenic threat from one area of the world can spread rapidly across the globe in a very fast manner. We need to monitor the occurrence of these illnesses to try to protect populations.

D. All of the above.

Bloom's Level: 4. Analyze
Learning Outcome: 01.04
Section: 01.02
Topic: Infection and Disease

65.

A microbiologist obtained two pure isolated biological samples: one of a virus, and one of a viroid. The labels came off during a move from one lab to the next, however. The scientist felt she could distinguish between the two samples by analyzing for the presence of a single type of molecule. What type of molecule would she be looking for to differentiate between the two?

A. DNA
B.

Protein

C.

Lipids

D. RNA

Bloom's Level: 3. Apply
Learning Outcome: 01.09
Section: 01.04
Topic: Viruses

66.

Within a lab, a scientist has two samples-the first is a prion sample, while the second is a viroid sample. But those pesky labels have come off of the flasks! She wants to run a simple analysis to determine which one is which. What type of molecule would she look for to determine which one is which?

A.

Lipids

B. DNA

C.

Protein

D.

Polysaccharides

Bloom's Level: 3. Apply
Learning Outcome: 01.09
Section: 01.04
Topic: Viruses

67.

A scientist discovers a new species near coral reefs in Australia. On basic microscopic examination and after conducting a few simple experiments, he finds that this single-celled species is photosynthetic (using sunlight for energy), has a rigid cell wall structure with no peptidoglycan, uses a flagellum for motion, and contains a variety of internal structures that are bound by plasma membranes. Given this information, this new species is most likely a _____ cell in the _____ subcategory.

A. bacterial; eubacterial
B. eukaryotic; fungus
C. archaebacterial; fungus
D. eukaryotic; algae
E. eukaryotic; protozoan

Bloom's Level: 5. Evaluate
Learning Outcome: 01.07
Section: 01.03
Topic: Eukaryotes

68.

Scientists recently cloned Louis Pasteur and put him back to work in a modern lab. He promptly developed a gel that breaks down proteins. Since he hasn't been around for some time, he's unsure what the best application for his invention might be. Help him out. What pathogenic item in this gel would be most effective and safe at eliminating?

A.

Viroids on the surface of agricultural plant tissues

B.

Prions inside the central nervous system of cows

C.

Viruses on the surface of the skin

D.

Bacteria in the intestines of human beings

E.

The fungus that causes athlete's foot between people's toes

Bloom's Level: 3. Apply
Learning Outcome: 01.09
Section: 01.04
Topic: Infection and Disease
Topic: Viruses