

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

- 1) Microorganisms are involved in each of the following processes EXCEPT 1) _____
- A) food production.
 - B) smog production.
 - C) decomposition of organic material.
 - D) infection.
 - E) O₂ production.

Answer: B

Explanation: A)
B)
C)
D)
E)

Page Ref:

Topic:

- 2) Each of the following organisms would be considered a microbe EXCEPT 2) _____
- A) bacterium.
 - B) mushroom.
 - C) yeast.
 - D) virus.
 - E) protozoan.

Answer: B

Explanation: A)
B)
C)
D)
E)

Page Ref:

Topic:

3) The term used to describe a disease-causing microorganism is

3) _____

- A) virus.
- B) bacterium.
- C) infection.
- D) microbe.
- E) pathogen.

Answer: E

Explanation: A)
B)
C)
D)
E)

Page Ref:

Topic:

4) Common commercial benefits of microorganisms include synthesis of

4) _____

- A) aspirin.
- B) antibiotics.
- C) insulin.
- D) antibiotics and aspirin.
- E) antibiotics and insulin.

Answer: E

Explanation: A)
B)
C)
D)
E)

Page Ref:

Topic:

5) Commercial utilization of microbial products has become increasingly popular due to their environmentally friendly nature. Removal of these products from the environment typically utilizes

5) _____

- A) organic solvents.
- B) enzymes.
- C) alcohol.
- D) soap.
- E) organic acids.

Answer: B

Explanation: A)
B)
C)
D)
E)

Page Ref:

Topic:

6) The formal system for classifying and naming organisms was developed by

6) _____

- A) Ignaz Semmelweis.
- B) Robert Koch.
- C) Louis Pasteur.
- D) Carolus Linnaeus.
- E) Aristotle.

Answer: D

Explanation: A)
B)
C)
D)
E)

Page Ref:

Topic:

7) In the name *Staphylococcus aureus*, *aureus* is the

7) _____

- A) family name.
- B) domain name.
- C) specific name.
- D) genus.
- E) kingdom.

Answer: C

Explanation: A)
B)
C)
D)
E)

Page Ref:

Topic:

8) A prokaryotic cell may possess each of the following cellular components EXCEPT

8) _____

- A) a cell membrane.
- B) flagella.
- C) a cell wall.
- D) ribosomes.
- E) a nucleus.

Answer: E

Explanation: A)
B)
C)
D)
E)

Page Ref:

Topic:

9) Which of the following is NOT associated with viruses?

9) _____

- A) organelles
- B) capsid
- C) nucleic acid
- D) spikes
- E) envelope

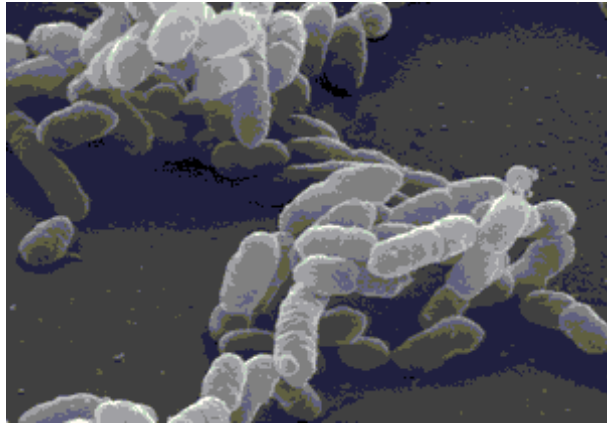
Answer: A

Explanation: A)
B)
C)
D)
E)

Page Ref:

Topic:

Figure 1.1



10) The bacterial shape of the cells in Figure 1.1 would best be described as

10) _____

- A) spiral.
- B) bacillus.
- C) ovoid.
- D) coccus.
- E) columnar.

Answer: B

Explanation: A)
B)
C)
D)
E)

Page Ref:

Topic:

11) Protozoan motility structures include

11) _____

- A) flagella.
- B) cilia.
- C) pseudopods.
- D) cilia and pseudopods only.
- E) cilia, flagella, and pseudopods.

Answer: E

Explanation: A)
B)
C)
D)
E)

Page Ref:

Topic:

- 12) Viruses are not considered living organisms because they
- A) are ubiquitous in nature.
 - B) typically associated with disease.
 - C) can only be visualized using an electron microscope.
 - D) are structurally very simple.
 - E) cannot reproduce by themselves.

12) _____

Answer: E

Explanation: A)
B)
C)
D)
E)

Page Ref:
Topic:

- 13) The infectious agent that causes AIDS is a
- A) virus.
 - B) bacterium.
 - C) mold.
 - D) yeast.
 - E) protozoan.

13) _____

Answer: A

Explanation: A)
B)
C)
D)
E)

Page Ref:
Topic:

- 14) Which of the following is NOT a domain in the three-domain system?
- A) archaea
 - B) eukarya
 - C) animalia
 - D) bacteria

14) _____

Answer: C

Explanation: A)
B)
C)
D)

Page Ref:
Topic:

15) Classification of organisms into three domains is based on

15) _____

- A) cellular proteins.
- B) the number of cells in the organism.
- C) cellular organization.
- D) nutritional requirements.
- E) the presence of a cell wall.

Answer: C

Explanation: A)
B)
C)
D)
E)

Page Ref:

Topic:

16) Archaea differ from bacteria in that archaea

16) _____

- A) use organic compounds for food.
- B) reproduce by binary fission.
- C) have diverse cell wall compositions.
- D) are prokaryotic.
- E) lack nuclei.

Answer: C

Explanation: A)
B)
C)
D)
E)

Page Ref:

Topic:

17) Who is credited with first observing cells?

17) _____

- A) Anton van Leeuwenhoek
- B) Robert Hooke
- C) Robert Koch
- D) Carolus Linnaeus
- E) Louis Pasteur

Answer: B

Explanation: A)
B)
C)
D)
E)

Page Ref:

Topic:

18) Who is credited with first observing microorganisms?

18) _____

- A) Robert Koch
- B) Robert Hooke
- C) Anton van Leeuwenhoek
- D) Carolus Linnaeus
- E) Louis Pasteur

Answer: C

Explanation: A)
B)
C)
D)
E)

Page Ref:

Topic:

19) Biogenesis refers to the

19) _____

- A) development of aseptic technique.
- B) germ theory of disease.
- C) development of life forms from preexisting life forms.
- D) spontaneous generation of organisms from nonliving matter.

Answer: C

Explanation: A)
B)
C)
D)

Page Ref:

Topic:

20) If you were setting up an experiment to disprove spontaneous generation in a liquid medium, which of the following would be essential to the experiment?

20) _____

- A) adding antibiotics to the liquid
- B) using a sterile liquid and eliminating exposure to microorganisms
- C) starting with a liquid that contains microorganisms
- D) adding carbon dioxide to the liquid
- E) supplying the liquid with nutrients

Answer: B

Explanation: A)
B)
C)
D)
E)

Page Ref:

Topic:

- 21) The arguments supporting spontaneous generation were finally disproved by 21) _____
- A) Lazzaro Spallanzani.
 - B) Louis Pasteur.
 - C) Rudolf Virchow.
 - D) Francesco Redi.
 - E) John Needham.

Answer: B

Explanation: A)
B)
C)
D)
E)

Page Ref:

Topic:

- 22) Regarding Louis Pasteur's experiments with the S-neck flask, which of the following statements is TRUE? 22) _____
- A) The possibility of contamination was removed.
 - B) Air exchange was involved.
 - C) All preexisting microorganisms were killed.
 - D) A food source was provided.
 - E) All of the answers are correct.

Answer: E

Explanation: A)
B)
C)
D)
E)

Page Ref:

Topic:

- 23) The microbial process of converting sugars to alcohol is known as 23) _____
- A) fermentation.
 - B) alcoholism.
 - C) lyophilization.
 - D) pasteurization.
 - E) tyndallization.

Answer: A

Explanation: A)
B)
C)
D)
E)

Page Ref:

Topic:

24) Proof that a microbe could cause disease was provided by

24) _____

- A) Semmelweis.
- B) Koch.
- C) Lister.
- D) Wasserman.
- E) Pasteur.

Answer: B

Explanation: A)
B)
C)
D)
E)

Page Ref:

Topic:

25) The use of phenol (carbolic acid) as a wound disinfectant was first practiced by

25) _____

- A) Holmes.
- B) Lister.
- C) Semmelweis.
- D) Koch.
- E) Pasteur.

Answer: B

Explanation: A)
B)
C)
D)
E)

Page Ref:

Topic:

26) Mycology is the study of

26) _____

- A) protozoa.
- B) molds.
- C) mycoplasma.
- D) mushrooms.
- E) molds, yeast, and mushrooms.

Answer: E

Explanation: A)
B)
C)
D)
E)

Page Ref:

Topic:

- 27) The first step for directly linking a microbe to a specific disease according to Koch's postulates is to _____
- A) obtain a sample of blood or other body fluid from a diseased animal.
 - B) inject a sample of blood or other body fluid from a diseased animal into a healthy animal.
 - C) compare the blood of a sick animal to blood obtained from a healthy animal.
 - D) culture the blood or other body fluid from a diseased animal using nutrient medium.
 - E) isolate microbes from the blood of healthy animals.

Answer: A

Explanation: A)
B)
C)
D)
E)

Page Ref:
Topic:

- 28) In which of the following situations would Koch's postulates be utilized? _____
- A) determination of the cause of cancer in a patient
 - B) formulation of a vaccine against a new pathogen in a genetic engineering lab
 - C) whenever the scientific method is used to investigate a microbiological problem
 - D) development of a new antibiotic in a pharmaceutical lab
 - E) determination of the cause of a patient's illness in a hospital microbiology lab

Answer: E

Explanation: A)
B)
C)
D)
E)

Page Ref:
Topic:

- 29) Robert Koch identified the cause of _____
- A) tuberculosis.
 - B) diphtheria.
 - C) smallpox.
 - D) anthrax.
 - E) AIDS.

Answer: D

Explanation: A)
B)
C)
D)
E)

Page Ref:
Topic:

30) _____ is the physician first associated with vaccination. 30) _____
A) Koch B) Pasteur C) Lister D) Jenner E) Escherich

Answer: D

Explanation: A)
B)
C)
D)
E)

Page Ref:

Topic:

31) Which of the following findings was essential for Edward Jenner's vaccination process? 31) _____
A) Someone who recovers from a disease will not acquire that disease again.
B) A weakened microorganism will not cause disease.
C) Disease is caused by viruses.
D) Exposure to a milder disease form may produce immunity.
E) Pathogenic microorganisms infect all humans and animals in the same manner.

Answer: D

Explanation: A)
B)
C)
D)
E)

Page Ref:

Topic:

32) Antibiotics are produced by 32) _____
A) protozoa.
B) fungi.
C) viruses.
D) bacteria.
E) bacteria and fungi.

Answer: E

Explanation: A)
B)
C)
D)
E)

Page Ref:

Topic:

33) The first antibiotic to be utilized was 33) _____
A) sulfonamides.
B) quinine.
C) vancomycin.
D) salvarsan.
E) penicillin.

Answer: E

Explanation: A)
B)
C)
D)
E)

Page Ref:

Topic:

34) Who was the first scientist to pursue a "magic bullet" that could be used to treat infectious disease? 34) _____
A) Lister
B) Ehrlich
C) Jenner
D) Pasteur
E) Semmelweis

Answer: B

Explanation: A)
B)
C)
D)
E)

Page Ref:

Topic:

35) Fungal infections are studied by 35) _____
A) mycologists.
B) virologists.
C) bacteriologists.
D) herpetologists.
E) parasitologists.

Answer: A

Explanation: A)
B)
C)
D)
E)

Page Ref:

Topic:

36) Vaccinations are available for all of the following diseases EXCEPT

36) _____

- A) mumps.
- B) rubella.
- C) hepatitis B.
- D) measles.
- E) strep throat.

Answer: E

Explanation: A)
B)
C)
D)
E)

Page Ref:

Topic:

37) Recombinant DNA refers to the

37) _____

- A) interaction between human and bacterial cells.
- B) study of the function of genes.
- C) DNA resulting when bacterial genes are inserted in an animal genome.
- D) synthesis of proteins from genes.
- E) study of bacterial ribosomes.

Answer: C

Explanation: A)
B)
C)
D)
E)

Page Ref:

Topic:

38) Molecular biology is the study of

38) _____

- A) enzyme function.
- B) RNA replication.
- C) protein synthesis.
- D) the structure and function of macromolecules essential to life.
- E) DNA synthesis.

Answer: D

Explanation: A)
B)
C)
D)
E)

Page Ref:

Topic:

- 39) Microorganisms are essential to our life. Each of the following is an example of a beneficial function of microorganisms EXCEPT 39) _____
- A) agriculture.
 - B) gene therapy.
 - C) increased morbidity.
 - D) alternative fuel production.
 - E) bioremediation.

Answer: C

Explanation: A)
B)
C)
D)
E)

Page Ref:

Topic:

- 40) The major food producers for other living organisms is/are 40) _____
- A) higher plants.
 - B) cyanobacteria.
 - C) algae.
 - D) higher plants and algae.
 - E) higher plants, cyanobacteria, and algae.

Answer: E

Explanation: A)
B)
C)
D)
E)

Page Ref:

Topic:

- 41) Gene therapy is currently used to treat all of the following diseases EXCEPT 41) _____
- A) colon cancer.
 - B) Duchenne's muscular dystrophy.
 - C) cystic fibrosis.
 - D) severe combined immunodeficiency disease (SCID).
 - E) LDL-receptor deficiency.

Answer: A

Explanation: A)
B)
C)
D)
E)

Page Ref:

Topic:

- 42) Recombinant DNA technology has become an increasingly important part of our life. It is used for all of the following EXCEPT 42) _____
- A) vaccine production.
 - B) increasing the nutritional value of food.
 - C) synthesis of water.
 - D) drug production.
 - E) enhancing food longevity.

Answer: C

Explanation: A)
B)
C)
D)
E)

Page Ref:
Topic:

- 43) Normal microbiota are typically found in and on all the following body locations EXCEPT the 43) _____
- A) mouth.
 - B) upper respiratory system.
 - C) skin.
 - D) blood.
 - E) colon.

Answer: D

Explanation: A)
B)
C)
D)
E)

Page Ref:
Topic:

- 44) Which of the following statements about biofilms is FALSE? 44) _____
- A) Biofilms on rocks provide food for animal life.
 - B) Biofilms in your body protect mucous membranes from harmful microbes.
 - C) Biofilms on medical devices cause infections.
 - D) Compared to free-living bacteria, biofilms are more sensitive to antibiotics.
 - E) Biofilms in pipes can block the flow of water.

Answer: D

Explanation: A)
B)
C)
D)
E)

Page Ref:
Topic:

- 45) Development of emerging infectious disease can be a result of all of the following EXCEPT 45) _____
- A) microbial mutation.
 - B) changes in the environment.
 - C) modern transportation.
 - D) overuse of antibiotics.
 - E) use of genetically modified foods.

Answer: E

Explanation: A)
B)
C)
D)
E)

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Topic:

TRUE/FALSE. Write 'T' if the statement is true and 'F' if the statement is false.

- 46) Infectious disease is almost totally eradicated in our world. 46) _____

Answer: True False

Explanation:

Page Ref:

Topic:

- 47) A student has obtained a sample of pond water for study. Using the high-power lens, he observes several cells with nuclei. He can conclude that the cells are NOT bacteria. 47) _____

Answer: True False

Explanation:

Page Ref:

Topic:

- 48) The process of pasteurization to reduce food spoilage utilizes high heat to kill all bacteria present. 48) _____

Answer: True False

Explanation:

Page Ref:

Topic:

- 49) Anton van Leeuwenhoek was the first microbiologist to use a microscope to examine environmental samples for the presence of microorganisms. 49) _____

Answer: True False

Explanation:

Page Ref:

Topic:

- 50) Spontaneous generation refers to living cells arising only from other living cells. 50) _____
Answer: True False
Explanation:
Page Ref:
Topic:
- 51) Microbes are associated with life-sustaining benefits as well as life-threatening diseases. 51) _____
Answer: True False
Explanation:
Page Ref:
Topic:
- 52) All cells possess a cell wall. 52) _____
Answer: True False
Explanation:
Page Ref:
Topic:
- 53) Some viruses can contain both DNA and RNA. 53) _____
Answer: True False
Explanation:
Page Ref:
Topic:
- 54) Bovine spongiform encephalitis (BSE, or "mad cow disease") is caused by a virus. 54) _____
Answer: True False
Explanation:
Page Ref:
Topic:
- 55) All pathogens known to infect humans have been identified at this point in time. 55) _____
Answer: True False
Explanation:
Page Ref:
Topic:

ESSAY. Write your answer in the space provided or on a separate sheet of paper.

- 56) What is an emerging disease, and what are some of the sources for these "new" infectious diseases?
Answer:
Page Ref:
Topic:

57) Compare and contrast prokaryotic and eukaryotic cells.

Answer:

Page Ref:

Topic:

58) What was the function and importance of S-necked flasks in Louis Pasteur's experiments in disproving spontaneous generation?

Answer:

Page Ref:

Topic:

59) Explain the germ theory of disease and discuss why this theory is essential to the treatment of infectious disease.

Answer:

Page Ref:

Topic:

Answer Key

Testname: UNTITLED1

1) B

Page Ref:

Topic:

2) B

Page Ref:

Topic:

3) E

Page Ref:

Topic:

4) E

Page Ref:

Topic:

5) B

Page Ref:

Topic:

6) D

Page Ref:

Topic:

7) C

Page Ref:

Topic:

8) E

Page Ref:

Topic:

9) A

Page Ref:

Topic:

10) B

Page Ref:

Topic:

11) E

Page Ref:

Topic:

12) E

Page Ref:

Topic:

13) A

Page Ref:

Topic:

14) C

Page Ref:

Topic:

15) C

Page Ref:

Topic:

Answer Key

Testname: UNTITLED1

16) C

Page Ref:

Topic:

17) B

Page Ref:

Topic:

18) C

Page Ref:

Topic:

19) C

Page Ref:

Topic:

20) B

Page Ref:

Topic:

21) B

Page Ref:

Topic:

22) E

Page Ref:

Topic:

23) A

Page Ref:

Topic:

24) B

Page Ref:

Topic:

25) B

Page Ref:

Topic:

26) E

Page Ref:

Topic:

27) A

Page Ref:

Topic:

28) E

Page Ref:

Topic:

29) D

Page Ref:

Topic:

30) D

Page Ref:

Topic:

Answer Key

Testname: UNTITLED1

31) D

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32) E

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33) E

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34) B

Page Ref:

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35) A

Page Ref:

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36) E

Page Ref:

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37) C

Page Ref:

Topic:

38) D

Page Ref:

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39) C

Page Ref:

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40) E

Page Ref:

Topic:

41) A

Page Ref:

Topic:

42) C

Page Ref:

Topic:

43) D

Page Ref:

Topic:

44) D

Page Ref:

Topic:

45) E

Page Ref:

Topic:

Answer Key

Testname: UNTITLED1

46) FALSE

Page Ref:

Topic:

47) TRUE

Page Ref:

Topic:

48) FALSE

Page Ref:

Topic:

49) TRUE

Page Ref:

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50) FALSE

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51) TRUE

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52) FALSE

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