

Exam

Name _____

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

- 1) Which of the following is *not* true about protozoa? 1) _____
- A) All are eukaryotic.
 - B) They are classified by their method of locomotion.
 - C) They have rigid cell walls.
 - D) All have complex cells.
 - E) All are unicellular.

Answer: C

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

- 2) Which of the following is probably true about all the experiments that proved spontaneous generation? 2) _____
- A) Air was lacking.
 - B) Too much heat was applied.
 - C) Microorganisms were already present.
 - D) The food source could not support life.
 - E) All of the above.

Answer: C

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

3) Which of the following is true about viruses?

3) _____

- A) They cannot reproduce themselves.
- B) They cannot metabolize nutrients.
- C) They have DNA or RNA.
- D) They are not composed of cells.
- E) All of the above.

Answer: E

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

4) Which of the following is true about insect control by microorganisms?

4) _____

- A) The microorganisms may cause disease in other animals.
- B) This technique is just as dangerous as the use of chemical pesticides.
- C) The microorganisms are permanent in the environment.
- D) The microorganisms are specific for the insect pest.
- E) The insects develop resistance to the microorganisms.

Answer: D

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

5) Which of the following is true about fungi?

5) _____

- A) All are plants.
- B) All require organic material for growth.
- C) All are prokaryotic.
- D) All grow using sunlight and carbon dioxide.
- E) All are multicellular.

Answer: B

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

6) Who proved that microorganisms cause disease?

6) _____

- A) Pasteur
- B) Koch
- C) van Leeuwenhoek
- D) Hooke
- E) None of the above

Answer: B

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

7) Which of the following statements is untrue?

7) _____

- A) All fungi are multicellular.
- B) All bacteria lack nuclear membranes.
- C) All fungi have nuclear membranes.
- D) All protozoa are unicellular.
- E) All viruses are parasites.

Answer: A

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

8) Sourdough bread differs from conventional bread during leavening because

8) _____

- A) Yeasts produce acid.
- B) Yeasts produce carbon dioxide and ethyl alcohol.
- C) *Lactobacillus* produce acids.
- D) Acids are added to it during rising.
- E) Of the temperature and humidity.

Answer: C

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

- 9) Which of the following statements is true?
- A) Viruses cannot reproduce outside of a host cell.
 - B) Protozoa have rigid cell walls.
 - C) Fungi are plants.
 - D) Bacteria cannot move.
 - E) Algae are parasites.

9) _____

Answer: A

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

- 10) Which of the following is *not* part of the study of microbiology?
- A) Insects
 - B) Fungi
 - C) Viruses
 - D) Bacteria
 - E) Helminths

10) _____

Answer: A

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

- 11) A multicellular organism that has chitin cell walls and absorbs organic material is a(n) ____.
- A) Alga
 - B) Bacterium
 - C) Helminth
 - D) Fungus
 - E) Virus

11) _____

Answer: D

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

12) Which of the following pairs is mismatched?

12) _____

- A) Pathogen – disease causing
- B) Normal microbiota – harmful
- C) Chemotherapy – treatment of disease
- D) Vaccine – a preparation of microorganisms
- E) Penicillin – antibiotic

Answer: B

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

13) A nucleated, green cell that moves by means of flagella is a(n) _____.

13) _____

- A) Fungus
- B) Virus
- C) Alga
- D) Bacterium
- E) Helminth

Answer: C

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

14) Which one of the following does *not* belong with the others?

14) _____

- A) Fungi
- B) Archaea
- C) Eukarya
- D) Bacteria

Answer: A

Explanation: A)
B)
C)
D)

15) All members of the following groups contain DNA *except*

15) _____

- A) Protozoa.
- B) Helminths.
- C) Fungi.
- D) Viruses.
- E) Bacteria.

Answer: D

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

16) Which one of the following does *not* belong with the others?

16) _____

- A) Cellulose
- B) Peptidoglycan
- C) Nucleus
- D) Chitin

Answer: C

Explanation: A)
B)
C)
D)

17) Which of the following requirements was necessary for Pasteur to disprove spontaneous generation?

17) _____

- A) Removing microorganisms that were initially present
- B) Providing a food source that would support growth
- C) Keeping microorganisms out
- D) Supplying air
- E) All of the above

Answer: E

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

- 18) The best definition of biotechnology is 18) _____
- A) The use of living organisms to make desired products.
 - B) The use of microorganisms in sewage treatment.
 - C) Curing diseases.
 - D) The development of recombinant DNA technology.
 - E) All of the above.

Answer: A

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

- 19) Which of the following pairs is mismatched? 19) _____
- A) Microbial ecologist – studies bacteria that degrade oil
 - B) Immunologist – studies ecology of *Legionella pneumophila*
 - C) Molecular biologist – studies recombinant DNA
 - D) Microbial physiologist – studies fermentation of sourdough bread
 - E) Virologist – studies human immunodeficiency virus

Answer: B

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

- 20) Which of the following is a scientific name? 20) _____
- A) *Mycobacterium leprae*
 - B) Acid-fast bacteria
 - C) Leprosy bacterium
 - D) Hansen's bacillus

Answer: A

Explanation: A)
B)
C)
D)

- 21) Regarding Pasteur's experiments with the S-neck flask, which of the following statements is true? 21) _____
- A) All microorganisms were killed before beginning.
 - B) Any possibility of contamination was removed.
 - C) There was a food source involved.
 - D) There was air involved.
 - E) All of the above.

Answer: E

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

- 22) Archaea differ from bacteria because archaea 22) _____
- A) Reproduce by binary fission.
 - B) Lack nuclei.
 - C) Use organic compounds for food.
 - D) Lack peptidoglycan.
 - E) None of the above.

Answer: D

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

- 23) You are observing a cell through a microscope and note that it has no apparent nucleus. You 23) _____
conclude that it most likely
- A) Is part of a multicellular animal.
 - B) Moves by pseudopods.
 - C) Has a peptidoglycan cell wall.
 - D) Has a cellulose cell wall.
 - E) None of the above.

Answer: C

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

24) Who was the first to observe microorganisms with a microscope?

24) _____

- A) Pasteur
- B) Hooke
- C) van Leeuwenhoek
- D) Koch
- E) None of the above

Answer: C

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

25) All of the following have cell walls *except*

25) _____

- A) Bacteria.
- B) Plantae.
- C) Animalia.
- D) Fungi.
- E) None of the above.

Answer: C

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

26) In the name *Escherichia coli*, *coli* is the

26) _____

- A) Specific epithet.
- B) Genus.
- C) Kingdom.
- D) Domain.
- E) None of the above

Answer: A

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

27) Who disproved the theory of spontaneous generation?

27) _____

- A) van Leeuwenhoek
- B) Pasteur
- C) Hooke
- D) Koch
- E) None of the above

Answer: B

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

28) Which of the following does *not* belong with the others?

28) _____

- A) Protista
- B) Helminth
- C) Plantae
- D) Animalia
- E) Fungi

Answer: A

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

29) Which of the following findings was essential for Jenner's vaccination process?

29) _____

- A) Disease is caused by viruses.
- B) Vaccination provides immunity.
- C) A weakened microorganism may produce immunity.
- D) Someone who recovers from a disease will not acquire that disease again.
- E) A weakened microorganism will not cause disease.

Answer: C

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

30) Which of the following lack a nucleus?

30) _____

- A) Bacteria
- B) Animalia
- C) Fungi
- D) Protozoa
- E) None of the above

Answer: A

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

31) Which of the following does *not* belong with the others?

31) _____

- A) Human diseases
- B) Insect control
- C) Recycling elements
- D) Sewage treatment
- E) Bioremediation

Answer: A

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

32) Which of the following pairs is mismatched?

32) _____

- A) Koch – aseptic surgery
- B) Ehrlich – chemotherapy
- C) Jenner – vaccination
- D) Pasteur – proof of biogenesis

Answer: A

Explanation: A)
B)
C)
D)

- 33) Which of the following is *not* an example of biotechnology? 33) _____
- A) Bacterial production of vinegar
 - B) Bacterial production of yogurt
 - C) Bacterial production of French bread
 - D) Bacterial degradation of a dead animal
 - E) None of the above

Answer: E

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

- 34) A multicellular organism that has a mouth and lives in an animal host is a(n) _____. 34) _____
- A) Fungus
 - B) Bacterium
 - C) Helminth
 - D) Virus
 - E) Alga

Answer: C

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

- 35) An agent that reproduces in cells but is not composed of cells and contains RNA as its genetic material is a(n) _____. 35) _____
- A) Alga
 - B) Fungus
 - C) Bacterium
 - D) Virus
 - E) Helminth

Answer: D

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

36) Who observed cells in plant material?

36) _____

- A) Hooke
- B) van Leeuwenhoek
- C) Pasteur
- D) Koch
- E) None of the above

Answer: A

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

37) Fungi differ from bacteria because fungi

37) _____

- A) Have DNA.
- B) Have a nucleus.
- C) Have cell walls.
- D) Spoil food.
- E) None of the above.

Answer: B

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

38) You are looking at a white cottony growth on a culture medium. Microscopic examination reveals it is multicellular. You can conclude all of the following about this organism *except* that it

38) _____

- A) Is eukaryotic.
- B) Has cell walls.
- C) Has DNA enclosed in a nucleus.
- D) Absorbs organic nutrients.
- E) Is a bacterium.

Answer: E

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

39) Which of the following is a scientific name?

39) _____

- A) Streptococci
- B) Flesh-eating bacteria
- C) IGAS
- D) Group A streptococcus
- E) *Streptococcus pyogenes*

Answer: E

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

40) Bacteria differ from viruses because bacteria

40) _____

- A) Can live without a host.
- B) Have DNA and RNA.
- C) Have cells.
- D) All of the above.

Answer: D

Explanation: A)
B)
C)
D)

41) Recombinant DNA technology can be used to make all of the following *except*

41) _____

- A) Vaccines.
- B) Life.
- C) Drugs.
- D) Human hormones.
- E) None of the above.

Answer: B

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

42) Which of the following pairs is mismatched?

42) _____

- A) Hooke – cell theory
- B) Pasteur – fermentation
- C) van Leeuwenhoek – germ theory
- D) Lister – aseptic surgery
- E) None of the above

Answer: C

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

43) Classification of organisms in the three domains is based on

43) _____

- A) Cell wall.
- B) Nucleus.
- C) Number of cells.
- D) Cell type.
- E) Nutritional type.

Answer: D

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

44) Which of the following is *not* a domain in the three-domain system?

44) _____

- A) Archaea
- B) Eukarya
- C) Animalia
- D) Bacteria

Answer: C

Explanation: A)
B)
C)
D)

45) Which of the following pairs is mismatched?

45) _____

- A) Lancefield – immunology
- B) Winogradsky – microbial ecology
- C) Jenner – immunology
- D) Jacob and Monod – microbial genetics
- E) Weizmann – virology

Answer: E

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

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

46) Paul Berg received the Nobel Prize for developing the procedure for incorporating fragments of animal DNA into bacteria. List some reasons why his work was a major contribution to science.

Answer:

47) List two examples of biotechnology that involve recombinant DNA technology and two examples that do not.

Answer:

48) In 1835 Bassi showed that a silkworm disease was caused by a fungus, and in 1865 Pasteur found another silkworm disease was caused by a protozoan. Why do we use Koch's postulates instead of "Bassi's" or "Pasteur's" postulates?

Answer:

Answer Key
Testname: C1

- 1) C
- 2) C
- 3) E
- 4) D
- 5) B
- 6) B
- 7) A
- 8) C
- 9) A
- 10) A
- 11) D
- 12) B
- 13) C
- 14) A
- 15) D
- 16) C
- 17) E
- 18) A
- 19) B
- 20) A
- 21) E
- 22) D
- 23) C
- 24) C
- 25) C
- 26) A
- 27) B
- 28) A
- 29) C
- 30) A
- 31) A
- 32) A
- 33) E
- 34) C
- 35) D
- 36) A
- 37) B
- 38) E
- 39) E
- 40) D
- 41) B
- 42) C

Answer Key
Testname: C1

- 43) D
- 44) C
- 45) E
- 46)
- 47)
- 48)