

Chapter 01 - Learning About Human Biology

Multiple Choice

1. Which feature of life is the ability to maintain a stable internal state?

- a. energy production
- b. sensing the outside world
- c. reproduction
- d. homeostasis
- e. growth

ANSWER:

d

2. From which molecule do organisms receive instructions to reproduce and grow?

- a. ATP
- b. carbon
- c. hydrogen
- d. DNA
- e. elements

ANSWER:

d

3. The basic unit of life is the ____.

- a. atom
- b. molecule
- c. organelle
- d. cell
- e. organism

ANSWER:

d

4. Homeostasis refers to ____.

- a. the ability of a cell to reproduce
- b. directions the cell receives from DNA
- c. the maintenance of a constant internal state
- d. the extraction of energy from nutrients
- e. the ability of organisms to move within their environment

ANSWER:

c

5. The pancreas is an organ that regulates blood glucose levels. When glucose levels rise above normal, the pancreas releases insulin to lower blood glucose levels. This is an example of ____.

- a. evolution
- b. mutation
- c. immunity
- d. homeostasis
- e. variability

ANSWER:

d

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6. "A change over time" is the definition of ____.

- a. classification
- b. ecology
- c. physiology
- d. evolution
- e. heritage

ANSWER:

d

7. Which evolutionary descriptive term is common to both fish and humans?

- a. primates
- b. mammals
- c. bacteria
- d. vertebrates
- e. archaea

ANSWER:

d

8. In terms of classification, humans belong to which domain?

- a. prokaryote
- b. Eukarya
- c. Archaea
- d. Bacteria
- e. protists

ANSWER:

b

9. Which characteristic distinguishes humans from other primates?

- a. complexity of the brain
- b. walking upright
- c. using tools
- d. body hair
- e. manual dexterity

ANSWER:

a

10. "Vertebrates" refers to animals that possess ____.

- a. hair
- b. mammary glands
- c. the ability to give birth to live young
- d. a backbone
- e. lungs

ANSWER:

d

11. All organisms in domain ____ are single-celled.

- a. Protists
- b. Fungi

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- c. Plants
- d. Bacteria
- e. Eukarya

ANSWER:

d

12. The most basic level of organization is the ____.

- a. atom
- b. molecule
- c. compound
- d. cell
- e. organ

ANSWER:

a

13. Which form of organization is classified between cell and organ?

- a. atom
- b. molecule
- c. compound
- d. organelle
- e. tissue

ANSWER:

e

14. Energy flows into the biosphere from ____.

- a. water
- b. raw materials
- c. decomposition
- d. ecosystems
- e. the sun

ANSWER:

e

15. Which is the correct order of organization in nature, from least inclusive to most inclusive?

- a. ecosystem → community → population → organism
- b. organism → community → population → ecosystem
- c. organism → population → community → ecosystem
- d. population → organism → ecosystem → community
- e. community → organism → population → ecosystem

ANSWER:

c

16. The flow of ____ and the cycling of ____ maintains nature's organization.

- a. water; populations
- b. atoms; energy
- c. nutrients; water
- d. energy; materials
- e. raw materials; water

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ANSWER:

d

17. Populations of different species comprise a(n) ____.

- a. populations
- b. biosphere
- c. ecosystem
- d. community
- e. evolution

ANSWER:

d

18. A systematic way of obtaining knowledge about the natural world is ____.

- a. science
- b. an hypothesis
- c. an experiment
- d. the variable
- e. a prediction

ANSWER:

a

19. The first step of the scientific method is to ____.

- a. perform an experiment
- b. make a prediction
- c. test a prediction
- d. analyze data
- e. observation of a natural event

ANSWER:

e

20. The statement “animals that live in the desert will produce concentrated urine” is ____.

- a. an opinion
- b. a hypothesis
- c. data
- d. a variable
- e. a control group

ANSWER:

b

21. Which of these is designed by researchers to test only a single prediction of a hypothesis at a time?

- a. controlled experiment
- b. experimental variable
- c. control group
- d. controlled variable
- e. experimental constant

ANSWER:

a

22. The control in an experiment ____.

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- a. makes the experiment invalid
- b. is an additional replicate for statistical purposes
- c. reduces experimental errors
- d. minimizes experimental inaccuracy
- e. allows a standard of comparison for the experimental group

ANSWER:

e

23. Critical thinking means to ____.

- a. challenge all concepts
- b. evaluate information before accepting it
- c. disagree with proposed ideas
- d. make quick decisions
- e. base decisions on opinions

ANSWER:

b

24. Science is based on ____.

- a. faith
- b. evidence
- c. authority
- d. consensus
- e. opinions

ANSWER:

b

25. In science, the word "theory" ____.

- a. is an explanation that has not been published
- b. has essentially the same meaning as a prediction
- c. is based mostly on opinions
- d. signifies that a hypothesis has been tested and proven over a period of time
- e. means that a scientist has a hunch something is true

ANSWER:

d

26. The validity of scientific discoveries should be based on ____.

- a. opinions
- b. evidence
- c. philosophy
- d. hearsay
- e. hunches

ANSWER:

b

27. After many years of testing, an hypothesis becomes accepted as a ____.

- a. fact
- b. prediction
- c. theory

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- d. conclusion
- e. variable

ANSWER:

c

28. A scientific theory will involve four of the following. Which is the exception?

- a. subjective conclusions
- b. carefully stated hypothesis
- c. repeated controlled experiments
- d. revisions or rejection if new evidence comes to light
- e. explanation of a large number of observations

ANSWER:

a

29. Emerging diseases ____.

- a. are related to lifestyle factors
- b. are caused by poor diet
- c. are never caused by viruses
- d. are caused by pathogens that until recently had limited impact on human health
- e. include obesity and type 2 diabetes

ANSWER:

d

30. Which health concerns are related to lifestyle factors?

- a. obesity and diabetes
- b. all cancers
- c. Lyme disease
- d. bacterial infections
- e. SARS respiratory infections

ANSWER:

a

Completion

31. The systematic approach to exploring the natural world is known as the _____.

ANSWER: scientific method

32. A(n) _____ is a testable statement proposed to explain an observation.

ANSWER: hypothesis

33. A(n) _____ is a statement that explains what you should observe about the question being addressed if the hypothesis is valid.

ANSWER: prediction

34. A(n) _____ is the group to which experimental results can be compared.

ANSWER: control

35. If the sample size in an experiment is too small, _____ error might distort the results.

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ANSWER: sampling

36. In controlled experiments, researchers study a(n) _____ variable and compare the results to those of the control group.

ANSWER: single

37. The objective evaluation of information is called evidence-based learning or _____.

ANSWER: critical thinking

38. A(n) _____ cannot be verified because it involves subjective judgment.

ANSWER: opinion

39. A(n) _____ is verifiable information.

ANSWER: fact

Essay

40. Explain the concept of homeostasis using the example of how we regulate our body temperature.

ANSWER: Answers will vary but should be similar to this. Homeostasis refers to the maintenance of a constant internal environment. In terms of temperature, our body attempts to maintain an internal temperature of 37°C. When body temperature falls below this value, we shiver. The contractions of our muscles generate heat and raises temperature back towards normal. When body temperature rises above this value, we sweat. As the sweat evaporates from our skin, it pulls heat from the body, reducing temperature back towards normal.

Matching

Answer the questions by matching the statement to the most appropriate function, process, or trait listed below.

- a. experiment
- b. evolution
- c. photosynthesis
- d. biosphere
- e. homeostasis

41. a process that converts sunlight into nutrient energy

ANSWER: c

42. process by which body temperature is kept fairly constant

ANSWER: e

43. a process whereby a researcher can manipulate the conditions under which observations are made

ANSWER: a

44. explains how populations of organisms change over time

ANSWER: b

45. refers to all parts of Earth where organisms live

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ANSWER: d

Answer the questions by matching the examples to the proper group according to their characteristics.

- a. Vertebrate
- b. Mammal
- c. Primate
- d. Eukarya
- e. Bacteria

46. kingdom of mostly single-celled organisms

ANSWER: e

47. includes humans, deer and dogs

ANSWER: b

48. includes humans, fish and lizards

ANSWER: a

49. kingdom to which humans belong

ANSWER: d

50. distinct group of mammals that includes humans and apes

ANSWER: c

Answer the questions by matching the examples to the proper group according to their characteristics.

- a. atom
- b. molecule
- c. cell
- d. tissue
- e. organ
- f. organ system
- g. organism
- h. population
- i. community
- j. ecosystem
- k. biosphere

51. these structures come together to form cells

ANSWER: b

52. a human being

ANSWER: g

53. smallest unit of life

ANSWER: c

Name _____ Class _____ Date _____
: _____ : _____ e: _____

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54. groups of the same species

ANSWER:

h

55. smallest unit of structure

ANSWER:

a

56. the interaction of various communities

ANSWER:

j

57. heart muscle

ANSWER:

d

58. the most inclusive level of organization

ANSWER:

k

59. the cardiovascular system

ANSWER:

f

60. groups of different organisms interacting in a local area

ANSWER:

i

61. the heart

ANSWER:

e