Student name:\_\_\_\_\_\_\_\_\_\_

**TRUE/FALSE - Write 'T' if the statement is true and 'F' if the statement is false.
1)** The region in which populations interact with each other and with the physical environment is called a(n) community.

 ⊚ true
 ⊚ false

**2)** Humans evolved from apes.

 ⊚ true
 ⊚ false

**3)** Only humans have a language that allows for the communication of information and experiences symbolically.

 ⊚ true
 ⊚ false

**4)** Humans are part of the biosphere and must live in harmony with it if we are to survive as a species.

 ⊚ true
 ⊚ false

**5)** Line graphs are used to depict the relationship between two quantities.

 ⊚ true
 ⊚ false

**6)** The general public needs to have an understanding of science in order to make informed decisions about our futures and our world.

 ⊚ true
 ⊚ false

**7)** If the control group in an experiment shows the same results as the test group, the treatment was successful.

 ⊚ true
 ⊚ false

**8)** To make all subjects think they are receiving the same treatment, patients in the control group can receive a placebo.

 ⊚ true
 ⊚ false

**9)** An important part of scientific research is repeatability.

 ⊚ true
 ⊚ false

**10)** A probability value of less than 5% in a scientific study is acceptable.

 ⊚ true
 ⊚ false

**11)** Technology is the application of scientific knowledge to the interests of humans.

 ⊚ true
 ⊚ false

**MULTIPLE CHOICE - Choose the one alternative that best completes the statement or answers the question.
12)** The scientific study of lifeis called

 A) biology.
 B) ecology.
 C) anatomy.
 D) biochemistry.
 E) limnology.

**13)** A complex individual that consists of organ systems is known as a(n)

 A) community.
 B) population.
 C) organism.
 D) tissue .
 E) species.

**14)** All of the ecosystemson the planet together are called the

 A) atmosphere.
 B) hydrosphere.
 C) biosphere.
 D) lithosphere.
 E) stratosphere.

**15)** In a swamp, all of the alligators would represent a(n)

 A) organism.
 B) population.
 C) community.
 D) ecosystem.
 E) biosphere.

**16)** The region in which populations interact with each other and with the physical environment is called a(n)

 A) entity.
 B) ecosystem.
 C) biosystem.
 D) community.
 E) biosphere.

**17)** All of the changes that occur starting from the time an egg is fertilized and continuing through childhood, adolescence, and adulthood are called

 A) metabolism.
 B) evolution.
 C) homeostasis.
 D) reproduction.
 E) development.

**18)** Which of the following statements most correctly defines homeostasis?

 A) All living organisms are alike.
 B) Living organisms do not change much over time.
 C) Human beings and other animals acquire materials and energy when they eat food.
 D) It takes energy to maintain the organization of the cell.
 E) Cells and organisms maintain a fairly constant internal environment.

**19)** The face of a sunflower turns to follow the sun as it moves across the sky. This is an example of

 A) metabolism.
 B) homeostasis.
 C) response to stimuli.
 D) development.
 E) reproduction.

**20)** Choose the correct order (1–5) of increasing complexity/organization.

 A) (1) tissues, (2) organ systems, (3) cells, (4) organs, (5) organism
 B) (1) cells, (2) organ systems, (3) tissues, (4) organs, (5) organism
 C) (1) tissues, (2) organs, (3) organ systems, (4) cells, (5) organism
 D) (1) cells, (2) tissues, (3) organs, (4) organ systems, (5) organism
 E) (1) organism, (2) organ systems, (3) organs, (4) tissues, (5) cells

**21)** Fish have scales that enable them to live in a water environment. This is an example of

 A) homeostasis.
 B) adaptation.
 C) metabolism.
 D) development.
 E) cellular organization.

**22)** The domain Eukarya contains\_\_\_\_\_\_\_\_ kingdom(s).

 A) one
 B) two
 C) three
 D) four
 E) five

**23)** Traditions, beliefs, and values are considered what aspect of human life?

 A) communicative
 B) cultural
 C) instructional
 D) biological
 E) chemical

**24)** The cell you are examining under the microscope appears to contain a nucleus. This organism belongs to the domain

 A) Bacteria.
 B) Archaea.
 C) Eukarya.
 D) Animalia.
 E) Fungi.

**25)** Which organisms aremost closely related to humans?

 A) spiders
 B) earthworms
 C) parakeets
 D) meerkats
 E) snakes

**26)** Humans clear forests to grow crops, and they build houses and cities. What are these an example of?

 A) how humans modify the biosphere
 B) how humans preserve ecosystems
 C) the high value humans place on biodiversity
 D) the positive impact of humans on life on Earth
 E) how humans do not need the rest of life on Earth

**27)** \_\_\_\_\_\_\_\_ observations are supported by factual information, while \_\_\_\_\_\_\_\_ observations involve personal judgment.

 A) Subjective; analytical
 B) Objective; analytical
 C) Objective; subjective
 D) Objective; hypothetical
 E) Subjective; theoretical

**28)** Which of the following statements is an objective observation?

 A) This milk tastes funny.
 B) This package is larger than that one.
 C) I like this picture.
 D) This mattress feels hard to me.
 E) I think I am going to be sick.

**29)** What is the unifying principle of the biological sciences?

 A) technology
 B) anatomy
 C) biochemistry
 D) taxonomy
 E) evolution

**30)** Where on a graph can you find the information that the graph pertains to?

 A) The x-axis only.
 B) The y-axis only.
 C) The dot points that are connected by the lines of the graph.
 D) The top of each bar in a bar graph.
 E) The x-axis and y-axis.

**31)** The tentative explanation to be tested is called

 A) a theory.
 B) a hunch.
 C) a hypothesis.
 D) the data.
 E) the conclusion.

**32)** The information collected during the experiment or observation is called

 A) a theory.
 B) a hunch.
 C) the hypothesis.
 D) the data.
 E) the conclusion.

**33)** The cause of stomach ulcers appears to be

 A) excess stomach acid.
 B) the bacterium *Helicobacter pylori.*
 C) drinking too much coffee.
 D) extreme stress.
 E) diets rich in meat products.

**34)** Which of the following statements is a hypothesis?

 A) If a student buys a meal plan, he or she will eat more vegetables.
 B) Ginny gained 5 lbs her freshman year.
 C) Blake failed the test.
 D) There are more calories in french fries than in colas.
 E) I like my biology class better than my other classes.

**35)** A controlled study in which neither the patient nor the examiner is aware of whether the patient is receiving a treatment, is called a(n)

 A) statistical study.
 B) double-blind study.
 C) variable study.
 D) adaptive study.
 E) blind study.

**36)** In an experiment designed to test the effect of temperature on goldfish respiration, the temperatures that were changed represent what type ofvariable?

 A) control
 B) responding
 C) experimental
 D) correlative
 E) placebo

**37)** One of the difficulties withpublication of research in scientific journals is that it

 A) is technical and may be difficult for a layperson to read.
 B) is often out of context or misunderstood.
 C) is unverified and usually not referenced.
 D) displays bias.
 E) is designed to convince readers to purchase a product.

**38)** Which of the following URLs would you trust least in writing a scientific paper?

 A) .com
 B) .gov
 C) .edu
 D) .org
 E) both .edu and .gov

**39)** The standard error tells

 A) how often the examiner made an error.
 B) how often the experimental variable was tested.
 C) the relationship between the control and test groups.
 D) whether or not the research has been published in a scientific journal.
 E) how uncertain a particular value is.

**40)** Which of the following is an example of correlation without causation?

 A) HPV can cause cervical cancer.
 B) Illegal drug use causes an increase in crime.
 C) *Helicobacter pylori* can cause ulcers.
 D) People who commit crimes also consume bread.
 E) Parents have children.

**41)** In a graph, the experimental variable is plotted on the

 A) x-axis.
 B) y-axis.
 C) x- and y-axis.
 D) z-axis.
 E) x- and z-axis.

**42)** Choose the following interest group that should be held most responsible for the future roles of new scientific technologies.

 A) scientists
 B) politicians
 C) clergy
 D) educators
 E) everyone

**43)** In conducting a review of the literature on the Internet, which of the following sources would be the least reliable?

 A) The Centers of Disease Control
 B) The Cystic Fibrosis Foundation
 C) The National Institute of Health
 D) The Pasteur Institute
 E) Astrology and Medicine

**44)** After studying biology, you should

 A) become an animal rights activist.
 B) be better able to make wise decisions regarding your own well-being and the earth's.
 C) get a high paying job as a biologist.
 D) understand all there is to know about humans and biology.
 E) dislike anything to do with biology.

**45)** Scientists who have a financial stake in a company are now required to state that when they do research. This is an example of

 A) ethics in science.
 B) financial planning.
 C) a new business model.
 D) a biotechnology revolution.
 E) statistical significance.

**46)** Which of the following statements best explains the atomic bomb and the benefit of nuclear physics to cancer therapy?

 A) Science and technology are not risk-free.
 B) Science and technology are wrong.
 C) Science and technology are good for mankind.
 D) Science and technology always provide value to people.

**SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.
47)** List the four kingdoms of life that are classified under the domain Eukarya and indicate the key features of each.

**48)** List the characteristics that are common to all living organisms.

**49)** Describethe steps associated with the scientific method.

**Answer Key**Test name: chapter 1

1) FALSE

2) FALSE

3) TRUE

4) TRUE

5) TRUE

6) TRUE

7) FALSE

8) TRUE

9) TRUE

10) TRUE

11) TRUE

12) A

13) C

14) C

15) B

16) B

17) E

18) E

19) C

20) D

21) B

22) D

23) B

24) C

25) D

26) A

27) C

28) B

29) E

30) E

31) C

32) D

33) B

34) A

35) B

36) C

37) A

38) A

39) E

40) D

41) A

42) E

43) E

44) B

45) A

46) A

47) Kingdom Protista: Complex single-celled organisms, sometimes filaments, colonies, or even multicellular. Absorb, photosynthesize, and ingest food.<br> Kingdom Fungi: Mostly multicellular filaments with specialized, complex cells. Absorb food.<br> Kingdom Plantae: Multicellular, usually with specialized tissues, containing complex cells, photosynthesize. <br> Kingdom Animalia: Multicellular with specialized tissues containing complex cells. Ingest cells.

48) Organisms are organized. They have the ability to acquire materials and energy. They can reproduce and grow. Organisms have an evolutionary history.

49) Observation: New observations are made and previous data are studied.<br> Hypothesis: Input from various sources is used to formulate a testable statement.<br> Experiment/Observation: The hypothesis is tested by experiment or further observations.<br> Conclusion: The results are analyzed, and the hypothesis is supported or rejected.<br> Scientific Theory: Many experiments and observations support a theory.