What Is Life - Guide to Biology with Physiology Update 5th edition Phelan Test Bank

SKU: 9781319612822-TEST-BANK

Name:_____ Class:_____ Date:_____

Chapter 1

1. Biology is:
   a. the study of living things.
   b. always used responsibly in advertising claims.
   c. a separate branch of science that studies how organisms interact with each other and with their environment.
   d. mostly a collection of facts that can be ordered and memorized.
   e. the means by which we can answer questions such as "Does God exist?"

ANSWER: a

2. A general fact-based understanding of the fundamentals of biology and other sciences is referred to as:
   a. statistical science.
   b. superstition.
   c. scientific literacy.
   d. pseudoscience.
   e. true science.

ANSWER: c

3. Biological literacy includes the ability to:
   a. use scientific-sounding language to promote consumer products.
   b. make assumptions about the world, based on the opinions of others.
   c. determine if one phenomenon caused another, just by making one or a few observations.
   d. apply the scientific method to evaluate non-quantifiable, subjective information.
   e. use the process of scientific inquiry to think creatively about real-world issues that have a biological component.

ANSWER: e

4. Scientific thinking relies on which of the following?
   a. accepting the statements of others as true
   b. intuition
   c. memorizing facts
   d. skepticism
   e. applying your preconceptions

ANSWER: d

5. "Science is self-correcting." This means that:
   a. science is incapable of producing mistaken beliefs if its studies are carefully done.
   b. science only accepts what is true.
   c. scientists correct their personal biases before engaging in scientific study.
   d. science actively seeks to disprove its own theories and hypotheses.
   e. scientists always proofread each other's work.

ANSWER: d

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6. After one conducts a critical experiment, what is the next step in the scientific process?
   a. Make observations.
   b. Formulate a hypothesis.
   c. Draw conclusions, and make revisions.
   d. Devise a testable prediction.
   e. Formulate a null hypothesis.

ANSWER: c

7. What should you do when something you believe turns out to be wrong?
   a. feel ashamed
   b. blame the government
   c. change your mind
   d. doubt your ability to properly perceive the sensory stimuli of the world
   e. regroup and keep testing your hypothesis until you prove yourself right

ANSWER: c

8. The raw materials of science are:
   a. hunches.
   b. theories.
   c. predictions.
   d. observations.
   e. hypotheses.

ANSWER: d

9. In your lab, you notice that pea plants that were given a mixture of water and fertilizer have grown nearly three times as tall as pea plants that were given water only. This step of the scientific method is:
   a. stating a law.
   b. making an observation.
   c. drawing a conclusion.
   d. conducting a critical experiment.
   e. formulating a theory.

ANSWER: b

10. “Engaging in aerobic activity three times each week will reduce cholesterol levels” is a:
   a. substantiated explanation.
   b. testable hypothesis.
   c. scientific control.
   d. critical experiment.
   e. null hypothesis.

ANSWER: b

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11. Scientific data:
    a. can be generalized to a much larger population.
    b. are used to support or refute a hypothesis.
    c. cannot be collected in a completely unbiased way.
    d. are always true.
    e. must be collected in laboratories.

ANSWER: b

12. If your hypothesis is "Estrogens in sewage runoff can cause individual fish to develop both male and female reproductive structures," what is your null hypothesis?
    a. Estrogens in sewage runoff have no effect on the development of fish reproductive structures.
    b. Estrogens in sewage runoff cause individual turtles to develop both male and female reproductive structures.
    c. Estrogens in sewage runoff cause fish possessing both male and female reproductive structures into fish with either male or female reproductive structures.
    d. Testosterones in sewage runoff cause individual fish to develop both male and female reproductive structures.
    e. Testosterones in sewage runoff have no effect on the development of fish reproductive structures.

ANSWER: a

13. In a well-designed experiment:
    a. the prediction will most likely be true.
    b. you can prove your hypothesis to be true.
    c. the prediction will be highly probable if the explanation is correct.
    d. the null hypothesis will not be tested.
    e. only the researchers will know who is receiving a placebo.

ANSWER: c

14. Which statement is most correct?
    a. You can prove a hypothesis to be true.
    b. You can prove a hypothesis to be false.
    c. Accepting or rejecting a hypothesis is the same as proving whether or not the hypothesis is true.
    d. By rejecting a hypothesis, you also reject any theory that was correlated with that hypothesis.
    e. You can accept or reject a hypothesis but never prove it to be true.

ANSWER: e

15. A useful scientific hypothesis is one that is:
    a. proven.
    b. testable.
    c. conclusive.

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d. accurate.
e. abstract.

ANSWER: b

16. When conducting a scientific experiment, a(n) _____ is tested.
a. theory
b. prediction
c. question
d. answer
e. null variable

ANSWER: b

17. If your hypothesis is "Echinacea reduces the duration and severity of the common cold," what is the best testable prediction for this hypothesis?
a. If echinacea reduces the duration and severity of the symptoms of the common cold, then it should also reduce the duration and severity of symptoms of the flu.
b. If echinacea reduces the duration and severity of the symptoms of the common cold, then individuals who take echinacea should get sick less frequently than those who do not take it.
c. If echinacea reduces the duration and severity of the symptoms of the common cold, then individuals who take echinacea and get sick with colds should suffer a shorter duration of milder illness .
d. If echinacea reduces the duration and severity of the symptoms of the common cold, then individuals who take echinacea should get sick less frequently than those who do not take it, and when they do get sick, their illness should not last as long.
e. If echinacea reduces the duration and severity of the symptoms of the common cold, then individuals who take echinacea should get sick more frequently than those who do not take it, and when they do get sick, their illness should last longer.

ANSWER: c

18. You are given a pill in a scientific trial that looks identical to a pill containing an active ingredient, but your pill does not contain an active ingredient. The pill you were given is called a(n):
a. treatment.
b. aspirin.
c. tablet.
d. narcotic.
e. placebo.

ANSWER: e

19. Which factor would be important in testing whether robins liked to eat worms?
a. Was there great variation in the redness of breast feathers in the robins tested?
b. Did the robins tested cock their heads before eating a worm?
c. Were the robins tested deprived of food for equal amounts of time?
d. How many hops did the robins tested make before eating a worm?

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e. Did the robins tested sing or chirp before eating a worm?

ANSWER: c

20. If your hypothesis is rejected, then:
    a. your experiment was a success.
    b. your experiment was poorly designed.
    c. your data is only half as reliable.
    d. you should change the level of statistical significance until your hypothesis is accepted.
    e. you may still have learned something important about the system you were testing.

ANSWER: e

21. Some have claimed that the herb echinacea reduces the likelihood of catching the common cold. In many hundreds of studies, this claim has been refuted. Assuming these studies were properly conducted, which of the following is a scientifically responsible claim that an echinacea advocate could make in support of further research on this subject?
    a. The investigators were paid off by the drug companies.
    b. The effective dosage of echinacea was outside the range of the dosages given in the scientific studies.
    c. The investigators were growing echinacea and reported reduced colds in their customers.
    d. Investigator bias negatively influenced the outcome of every study that was conducted.
    e. The investigators purposely gave the subjects placebos instead of echinacea pills in all of the studies.

ANSWER: b

22. A critical experiment:
    a. gathers results that support the hypothesis.
    b. does not require a null hypothesis.
    c. enables decisive determination of whether a particular hypothesis is better than alternative hypotheses.
    d. enables comparison between control and experimental groups to determine the effect of a treatment.
    e. produces graphical data.

ANSWER: c

23. If the results of an experiment turn out differently from what you expected, then:
    a. you didn't follow the scientific method.
    b. you need to redo your experiment until you get the expected result.
    c. you should revise the hypothesis.
    d. you should not report the experiment.
    e. the experiment was a failure.

ANSWER: c

24. Which of these is not an example of a theory?
    a. Diseases are caused by germs.

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b. Living cells arise from other preexisting cells.
c. Molecules are composed of atoms.
d. Species evolve through natural selection.
e. Shaving body hair causes it to grow back coarser and darker.

ANSWER: e

25. In science, theories tend to be _____ than hypotheses.
a. more speculative
b. less scientific
c. more experimental
d. broader in scope
e. less reliable

ANSWER: d

26. An experimental condition applied to research subjects is called a:
a. control.
b. randomization.
c. treatment.
d. placebo.
e. variable.

ANSWER: c

27. Which of the following is the best description of a control group in an experiment?
a. The control group and the test groups may have several differences between them.
b. The control group is identical to each test group, except for the variable under investigation.
c. There can be more than one difference between the control group and test groups but not several differences; otherwise, the experiment is invalid.
d. There should be more than one control group in any experiment.
e. The control group is a test group that is chosen at random.

ANSWER: b

28. In a recent study, patients treated with a genetically engineered heart drug were able to walk on a treadmill for 26 seconds longer than patients who did not receive the drug and showed no side effects. Can we conclude that this drug is an effective treatment for heart disease?
a. Yes. Twenty-six seconds is a statistically significant difference.
b. No. It is not clear that the proper controls were made.
c. Yes. The ability to walk longer distances on a treadmill is correlated with cardiac capacity.
d. No. It is not clear how many subjects were in the study.
e. No. Genetically engineered drugs cannot be tested via the scientific method; they require comparative observations.

ANSWER: b

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29. In a randomized, controlled, double-blind study:
    a. neither the experimenter nor the subject know whether the subject is in a control group or an experimental group.
    b. individuals will be assigned to an experimental or control group depending on whether or not they took part in a pilot study.
    c. experimental subjects are blindfolded when given the experimental treatment.
    d. all experimental groups are filled randomly using no particular criteria.
    e. the experimenter knows which subjects are in the experimental group but not the control group.

ANSWER: a

30. In many reptiles, the incubation temperature of the egg determines the sex of a fetus; higher temperatures lead to more males. However, DDE (a chemical byproduct of DDT) in the environment before birth drastically lowers the normal percentage of males. You want to design a good scientific experiment to illustrate this phenomenon, but before you can, you must properly identify the different components of the experiment. Which choice does not properly identify an experimental component?
    a. The sample size of your experiment would be the number of eggs tested.
    b. The control group would be the group of eggs you do not expose to DDE before birth.
    c. The constant in this experiment would be the application of DDE.
    d. The experimental group would be the group of eggs you did expose to DDE before birth.
    e. The null hypothesis would be "DDE has no effect on sex determination."

ANSWER: c

31. Dr. Foster is studying the effectiveness of a new memory-boosting diet supplement. He posts an ad for subjects at two local colleges. He assigns 55 students from college A to the treatment group (daily doses of the diet supplement) and 60 students from college B (no supplement) to the control group. After 6 months of the study, Dr. Foster gives all of the students in each group a memory test. The treatment group scores an average of 20 points higher than the control group (a significant difference). Based on these findings, Dr. Foster declares that the memory-boosting supplement helps increase a person's memory. What would improve the design of the Dr. Foster's study?
    a. Make the number of students in both groups the same.
    b. Randomly assign students to one of the two conditions (treatment or control).
    c. Administer the supplement for a longer period of time.
    d. Give the control group half the daily dosage of the diet supplement that the treatment group receives.
    e. Deprive the control group of sleep to see if that also affects memory recall.

ANSWER: b

32. In an experiment testing the efficacy of cough syrup Brand X, researchers selected 500 participants for the study, and created a control and a placebo group. For this experiment to be considered controlled:
    a. the groups must contain a large number of participants to ensure statistical significance.
    b. no variation exists among the control group.
    c. no variation exists among the 500 participants.
    d. the variation between the participants is randomly divided into the two groups.

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e. the researchers must never know the group in which the participants are included.

ANSWER: d

33. Alon claimed that a tincture of a local herb was effective in lowering anxiety and was planning to invest in the product. As evidence of his claim, Alon, who had anxiety over his financial situation, said that he felt much better after the treatment, was much more relaxed, and no longer worried about his finances. Which combination of methodological flaws best characterizes Alon's investigation?

a. No hypothesis was developed.
b. There was a lack of appropriate controls and lack of an appropriate outcome measure.
c. There was a lack of randomization, lack of replication, and lack of an appropriate outcome measure.
d. There was a lack of replication and lack of appropriate controls.
e. There was a lack of an appropriate outcome measure, replication, randomization, and controls.

ANSWER: e

34. A biologist was concerned about the environmental effects of an insecticide being used in his area to kill mosquitos carrying equine encephalitis. So he decided to study the environmental impact of this insecticide on blue jay reproduction. He selected two small habitats with similar vegetation and similar-sized blue jay populations (about 120 birds) with equal reproductive rates. One habitat, selected at random, was sprayed with insecticide, whereas the other habitat was used as a control. Blue jay reproduction rates were measured in both habitats before and after the treatment. What was the most important flaw in this investigation?

a. poor outcome measure
b. lack of controls
c. lack of replication
d. lack of randomization
e. This investigation had no important flaws.

ANSWER: c

35. Which technique is used to help reduce experimenter bias?

a. Create experiments that are reproducible and repeatable.
b. Control extraneous variables as much as possible.
c. Include a control group in your experiment.
d. Be aware of potential placebo effects.
e. Keep the experimenter blind to the conditions in an experiment or its purpose.

ANSWER: e

36. While measuring the fingers of people in different groups to study physical symmetry, a researcher noted that when she measured individuals from a group that she predicted would be more symmetrical, she was more likely to remeasure if her digital ruler indicated a large asymmetry. This is an example of which of the following?

a. experimenter bias
b. placebo effect
c. double-blind experimental design

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d. randomized effect
e. a treatment/control study

ANSWER: a

37. In a drug trial investigating the effects of a new drug, neither the research scientists nor the participants know if they are in the treatment or the control group. What does this type of study design control for?
a. experimenter bias
b. extraneous variables
c. placebo effect
d. spurious correlations
e. non-random assignment

ANSWER: a

38. A powerful way to demonstrate that observed differences between a treatment group and a control group truly reflect the effect of the treatment is for researchers to:
a. get their study published in a scientific journal.
b. use a variety of statistical tests until they find one that shows statistical significance.
c. conduct the experiment over and over again.
d. make more observations.
e. formulate as many hypotheses as possible.

ANSWER: c

39. Which statement regarding visual displays of data is false?
a. In a line graph, a line or curve may be used to illustrate a relationship between two variables.
b. In a bar graph, the height of each bar is proportional to the value it represents.
c. In a line graph, a line or curve may be used to connect related data points.
d. In a pie chart, data is represented in "slices."
e. The legend describes the content of the display.

ANSWER: e

40. You conduct a study to determine how the amount of time spent studying affects students' performance on exams, and you want display the data you have collected using a line graph. What is the dependent variable, and on which axis should it be represented in your graph?
a. The dependent variable is "time spent studying," and it should be represented on the *x*-axis.
b. The dependent variable is "time spent studying," and it should be represented on the *y*-axis.
c. The dependent variable is "performance on exams," and it should be represented on the *x*-axis.
d. The dependent variable is "performance on exams," and it should be represented on the *y*-axis.
e. The dependent variable is "time spent studying," and it can be represented on either the *x*- or *y*-axis.

ANSWER: d

41. The set of analytical and mathematical tools designed to help researchers gain understanding from the data they gather is called:

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a. geometry.
b. biology.
c. genetics.
d. science.
e. statistics.

ANSWER: e

42. If you toss a coin and it comes up heads 73 consecutive times, what is the probability that it will come up heads on the 74th toss?

a. 1
b. 1/2
c. 0
d. 73/74
e. 1/74

ANSWER: b

43. Professor Marsh wanted to know if using a textbook helped students perform better in biology class. She asked a group of students if they had access to a textbook and then looked at their average exam scores. She found that the students who said they had access to textbooks scored an average of 75% +/− 8%, and those who did not scored on average 71% +/− 7%. What can Professor Marsh conclude from this study?

a. Students who have access to textbooks perform better in class than those who do not.
b. Students who have access to textbooks are less smart than those who do not.
c. Nothing. Perhaps, by chance, more high-performing students had access to textbooks.
d. A strong effect of textbook access can be generalized to other subject areas.
e. The variation in averages is large, so nothing can be concluded.

ANSWER: c

44. Which of the following is a good example of two phenomena that are correlated but show no causal relationship?

a. Whenever the price of oil goes up, the price of airplane tickets goes up.
b. Whenever I do poorly on a biology exam, I eat a quart of ice cream.
c. I did poorly on my last biology exam, so I ate a quart of ice cream.
d. Between 1937 and 1979, every year that a Democrat was elected President of the United States, a National League team won the World Series, whereas every year a Republican was elected President of the United States, an American League team won the World Series.
e. When I walk to the bus, the trees I pass are a maple, an oak, an elm, a hickory, and another maple, in that order.

ANSWER: d

45. The philosophy of Intelligent Design holds that strong evidence exists for creation by a divine being because some living things have parts that are so complex and complicated that they simply couldn't have developed through evolutionary processes; they had to have been created. Intelligent Design is not a science because:

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a. no complex or complicated structures exist in nature.
b. most scientists don't believe in it.
c. several scientists do believe in creation science.
d. the idea that a deity created complex biological structures is not testable or measurable.
e. scientists already know how all complex structures came to be through evolution.

ANSWER: d

46. When comparing two groups, the _____, the more confident we are of the conclusion that a significant difference exists in the groups.
a. larger the variation in each group
b. smaller the variation in each group
c. smaller the difference between the two groups
d. fewer the number of individuals in each group
e. more variables we measure

ANSWER: b

47. Inclusion of misleading claims or "scientific-sounding" language to try and manipulate consumers is an example of:
a. anecdotal observations.
b. positive correlation.
c. pseudoscience.
d. experimenter bias.
e. the placebo effect.

ANSWER: c

48. Pseudoscience capitalizes on the belief shared by most people that:
a. the scientific bases for scientific-sounding claims are often not clear.
b. scientific thinking is beyond the reach of the average person.
c. scientific thinking cannot be questioned because of the method used.
d. scientific thinking is a powerful method for learning about the world.
e. scientific claims can be evaluated through the political process.

ANSWER: d

49. Which term best describes the application of scientific knowledge to specific purposes?
a. statistics
b. technology
c. pseudoscience
d. biology
e. experimentation

ANSWER: b

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50. Which issue would be least helped by application of the scientific method?
    a. comparing the effectiveness of two potential antibiotics
    b. determining the most effective safety products for automobiles
    c. developing more effective high school curricula
    d. formulating public policy on euthanasia
    e. evaluating the relationship between violence in video games and criminal behavior in teens

ANSWER: d

51. Science as a way of seeking principles of order differs from art, religion, and philosophy in that:
    a. science limits its search to the natural world of the physical universe.
    b. science deals exclusively with known facts.
    c. all scientific knowledge is gained by experimentation.
    d. all scientists wear white lab coats.
    e. there is no room for intuition or guessing.

ANSWER: a

52. Which statement cannot be evaluated by the scientific method?
    a. Cows are color-blind.
    b. Plants get energy from the sun.
    c. Trees emit psychic screams when you cut them down.
    d. Bees cannot fly in cold temperatures.
    e. Conjoined twins cannot be separated without one of them dying.

ANSWER: c

53. Which question cannot be answered by the scientific method?
    a. Is eyewitness testimony in criminal proceedings reliable?
    b. Does chemical runoff give rise to hermaphrodite fish?
    c. Does a child conceived from a sperm donor have a right to know who the donor was?
    d. Does hair that is shaved grow back coarser?
    e. Does the vaccine for measles cause autism?

ANSWER: c

54. Why is the scientific method an effective approach to answering questions about our world?

ANSWER: The scientific method is empirical, rational, testable, repeatable, and self-correcting. Unlike many other approaches to understanding the world, such as superstitions, the scientific method is effective and based in observations and analysis.

55. Describe the characteristics of a question that can be addressed through scientific thinking, and give some examples.

ANSWER: A good question to address using scientific thinking should relate to observed patterns or cause-and-effect relationships. The question should also be one that can be tested through measurement of some kind. The textbook proposes questions about the effects of echinacea on cold symptoms and

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the accuracy of eyewitness testimony in criminal justice. You may be able to think of other examples.

56. Formulate a null hypothesis for the following hypothesis: "Tomato plants exhibit a higher rate of growth when planted in compost instead of in soil." Why is the null hypothesis useful?

ANSWER: A null hypothesis example would be: "Tomato plants do not exhibit a higher rate of growth when planted in compost instead of soil." A null hypothesis is useful because it is easier to disprove; any single new observation that contradicts the null hypothesis allows us to reject it and conclude an alternative hypothesis.

57. Is organic produce healthier than non-organic produce? Formulate a testable prediction that addresses this question as an "if . . . then" statement.

ANSWER: If organic produce is healthier than non-organic produce, then people who consume only organic produce over a given time period will be healthier than people who consume non-organic produce.

58. How would you construct control and experimental groups to determine if organic produce is actually healthier than non-organic produce? Should you ask for volunteers for each group?

ANSWER: A group of people of the same age and social background would be divided into two groups: one group that eats only organic produce, and one group that eats only non-organic produce. You would study both groups for a finite period of time; let's say six months. You wouldn't want your participants to choose which group they participated in because your findings won't necessarily be representative of the larger group. Instead, people should be placed at random into one of these two groups.

59. Does the statement, "Evolution is just a theory," have any merit? Explain.

ANSWER: No. This statement incorrectly equates the everyday definition of the term "theory" with an actual scientific theory. A scientific theory is supported by a large body of evidence, so much so that it is generally regarded as fact. However, "theory" in the generic sense simply implies a question about a phenomenon. If someone makes as a statement such as "I have a theory about why it always rains more on Saturdays," what that person is really saying is "I have a hypothesis about why it rains more on Saturdays."

60. What are the key differences between experimental and control groups in any experiment?

ANSWER: An experimental group is any group of subjects who are exposed to a particular treatment. A control group is a group of subjects who are treated identically to the experimental group, with one exception—they are not exposed to the treatment.

61. What is "double-blind experimental design"?

ANSWER: In double-blind experimental design, neither the experimental subjects nor the experimenter know which treatment (if any) that a subject is receiving. This helps to eliminate any bias in experimental design and outcome.

62. You take a survey of your classmates to find out what portion of their study time is devoted to biology compared to other subjects. Which type of display of data would you use to represent your findings? Why?

ANSWER: A pie chart would be the best type of visual display of data for this information. Each "slice" is used to represent a portion of the whole. A legend can also be included to identify which information is

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represented by each pie slice.

63. Give an example of a positive correlation, and explain the phrase "correlation is not causation."

ANSWER: An example of a positive correlation might be: when more firefighters are at a fire, the fire is larger and causes more damage. This is a positive correlation because when one variable (the number of firefighters) increases, so does the other (the severity of the fire). This does not mean that firefighters make fires worse, however. "Correlation is not causation" refers to this type of scenario. Correlations can reveal relationships between variables, but they do not tell us how the variables are related or whether change in one variable actually causes change in another.

64. In an experiment designed to determine if organic produce is actually healthier than non-organic produce, people who only consumed organic produce during the six-month period had a range of body mass indices, blood pressures, and blood sugar levels, and people who consumed non-organic produce had an overlapping range of body mass indices, blood pressure, and blood sugar levels. How can one determine whether one group was healthier than the other, given the overlapping nature of these health parameters?

ANSWER: Statistical analysis can compare these two groups, computing differences and determining how reliable and significant these differences are.

65. List the basic steps of the scientific method. Explain why the process of using the scientific method is rarely conducted in this linear fashion.

ANSWER: The steps are as follows: (1) make observations; (2) formulate a hypothesis; (3) devise a testable prediction; (4) conduct a critical experiment; and (5) draw conclusions and make revisions. Although the scientific method includes these basic steps, the process of using the scientific method is rarely that rigid. The scientific method is adaptable and can be done effectively in numerous ways. This flexibility is what makes it such a powerful process that can be used to explore a wide variety of thoughts, events, or phenomena—not only in sciences but in all aspects of life.

66. Design an experiment using all the steps of the scientific method.

ANSWER: In answering this question, the student should first be sure to choose a question that can be answered using the scientific method. The answer should include at least the five basic steps of the scientific method: (1) making an observation, (2) formulating a hypothesis, (3) making a testable prediction, (4) detailing a controlled experiment, and (5) drawing a conclusion. The experiment that the student designs should contain an experimental group, a control group, and a description of the experimental and dependent variables and how the experiment would be performed. Finally, the student should explain what he or she would do after the results have been compiled, that is, what changes or revisions he or she would propose for the experiment as well as any ideas for further experimentation on the subject that he or she might later pursue.

67. Give an example of a controlled experiment and an example of one that is not controlled. Explain the differences, and make a judgment about which experiment is more scientifically valid.

ANSWER: The student can give examples of his or her own or describe the examples given in the textbook, such as temperature variability with gastric ulcers, making sure to note the importance not only of a control group, but also why it is important that the control and experimental groups be as similar as possible. The placebo effect might also be mentioned as another reason to use treatments that are as identical as possible, in addition to similar demographics in the groups. Experimenter bias and unconscious influence on the results of the experiment may also be mentioned as pitfalls that can be

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avoided by designing a well-controlled experiment.

68. Give an example of a pseudoscientific claim that you have encountered in your everyday life, and explain why it has no scientific validity.

ANSWER: The answers here will vary greatly, with some students using the examples given in the textbook, including those found on food products. The interesting and significant aspect of all of these answers lies in the students' explanations as to why the claims are invalid. The student may also comment on the value of knowing the scientific method in order to be able to assess critically those claims that are encountered regularly, especially in advertising.

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