

Student name: _____

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

- 1) Pellagra is an infectious disease.
- true
 - false
- 2) Dr. Joseph Goldberger's scientific finding about the cause of pellagra was not welcomed by members of the medical community.
- true
 - false

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

- 3) Which of the following are common signs or symptoms of pellagra?
- A) Mental confusion and scaly skin sores
 - B) Blurred vision and dry eyes
 - C) Constipation and mild fever
 - D) Nasal congestion and trouble breathing
- 4) The vitamin effective in treating pellagra is
- A) niacin.
 - B) biotin.
 - C) ascorbic acid.
 - D) vitamin K.
- 5) The physician who studied pellagra in 1914 was
- A) Arthur Lister.
 - B) Robert Cook.
 - C) Joseph Goldberger.
 - D) John Smith.

6) A nutrition researcher observes that preschool-aged children who eat fewer vegetables are more likely to be overweight or obese than those children who eat more vegetables. The researcher then develops a/an _____, a possible explanation for the observation, to guide her research project.

- A) hypothesis
- B) analysis
- C) placebo
- D) cohort

7) The first step in the scientific method is to

- A) make observations that generate questions.
- B) formulate a hypothesis.
- C) review current scientific literature.
- D) design a research study.

8) Robin is a nutrition researcher who conducts controlled laboratory experiments on cells derived from living organisms. This type of research is referred to as _____ experimentation.

- A) in vitro
- B) in vivo
- C) randomized controlled
- D) cellular

9) Which of the following statements is true?

- A) A scientist's professional affiliations and sources of financial support may influence his or her research findings.
- B) The results of one study are usually enough to convince the majority of nutrition scientists to adopt new ideas about nutrition-related topics.
- C) Dietary recommendations are generally based on the findings of one well-respected team of nutrition researchers.
- D) Since 1995, nutrition information has undergone few updates, because scientists have discovered all of the nutrients and determined their functions.

10) Which of the following statements is true?

- A) When interpreting results of their studies, researchers generally seek to include some bias into their analyses.
- B) Scientific studies to investigate the same question can have different findings.
- C) Control groups are not as important to nutrition-based research studies as they are to other types of research.
- D) A single-blind experiment is one in which neither the investigator nor the subjects know which treatment group each participant is a part of in the study.

11) A group of scientists suspects that certain dietary practices are partially responsible for different rates of hypertension among adults of different ethnic/racial groups. To test their hypothesis, the researchers examine data concerning the different population groups' hypertension rates and their past dietary practices. This research is a _____ study.

- A) retrospective
- B) case-control
- C) prospective
- D) hypothetical

12) A group of registered dietitian nutritionists is planning to conduct a scientific study to investigate the effects of eating honey on behavior in school-aged children. To start, the researchers will

- A) analyze the hypothesis.
- B) make observations.
- C) identify relationships between variables.
- D) gather data.

13) A medical researcher reads an article in *Today's Health-Conscious Woman* magazine about the benefits of using the phytochemical *capsaicin* to treat knee pain. She asks 10 people with arthritic knees to rub a cream that contains the phytochemical on their knee joints for 2 weeks. At the end of the 2 weeks, the researcher asks the subjects whether their knee pain improved, stayed about the same, or worsened during the treatment period. After collecting responses from the people, the researcher reports the results of her study during a popular TV show that is hosted by a doctor. Based on this information, which of the following statements is true?

- A) The researcher used a standard scientific design for research involving human subjects.
- B) The researcher reviewed scientific literature regarding the use of capsaicin to treat knee pain.
- C) The researcher subjected the results of her study to peer review.
- D) The researcher did not divide the subjects of her study into control and treatment groups.

14) A group of scientists conducts a scientific study to investigate dietary factors that influence the development of breast cancer. Which of the following activities is NOT likely to be a component of their research efforts?

- A) Making observations and formulating a hypothesis
- B) Submitting an article describing the study to a peer-reviewed journal
- C) Posting findings at the main researcher's personal website
- D) Collecting data and analyzing results

15) According to the observations of a nutrition scientist, laboratory mice are healthier when their diet contains physiological levels of vitamin D than when their diet lacks the micronutrient. The scientist hypothesizes that mice will be less likely to develop cancer when they consume a diet that supplies megadoses of vitamin D. Based on this information, the scientist is ready to

- A) plan a retrospective study involving at least 5,000 laboratory mice to test the vitamin D and cancer hypothesis in mice.
- B) design a double-blind study to test the vitamin D and cancer hypothesis in mice.
- C) conduct a controlled laboratory experiment to test the vitamin D and cancer hypothesis in mice.
- D) set up an experimental epidemiological study to test the vitamin D and cancer hypothesis in mice.

16) Researchers at a major university plan a 10-year scientific study to investigate lifestyle factors that contribute to heart disease. Which of the following activities is likely to be a component of their research efforts?

- A) Contacting the local news station to report their findings
- B) Submitting an article describing the study to a peer-reviewed journal
- C) Posting significant findings at the main researcher's personal website
- D) Establishing a place for the subjects to live for the duration of the study

17) Scientists enroll 500 healthy adults in a study and collect dietary and other lifestyle information about the group. After 6 years, the scientists determine that study participants who ate at least 5 servings of fruits and vegetables daily were less likely to develop high blood pressure than participants who ate fewer than 5 servings of these foods daily. This study is an example of a(n) _____ study.

- A) prospective
- B) nutritive
- C) retrospective
- D) introspective

18) A scientist adds 5 mcg of the mineral cadmium to the daily diet of 100 4-week-old laboratory mice. After 12 weeks, the researcher weighs and takes blood samples from each mouse. According to her findings, the mice lost weight during the 12-week period, and they have abnormal levels of certain hormones in their blood. Based on this information and your knowledge of scientific research, what would you tell the researcher about her findings?

- A) Her results are very interesting, and she should report her findings to nutrition scientists, so they can repeat her study and confirm the results.
- B) The findings are not meaningful or valid because of the way she designed her study.
- C) She needs to conduct more tests on the animals' blood, because her findings are incomplete.
- D) The findings need to be summarized in a research article for submission to a peer-reviewed nutrition journal.

19) A nutrition researcher adds 30 mg of the mineral iron to the daily diet of 50 4-week-old laboratory mice. After 10 weeks, the scientist takes blood samples from each mouse. According to his findings, the mice developed abnormal levels of certain enzymes in their red blood cells. Based on this information and your knowledge of scientific research, what would you tell him?

- A) He should report his findings to other nutrition scientists, so they can repeat his study and confirm the results.
- B) He should call a press conference and report his findings to the public, so they can avoid consuming excess iron.
- C) He should consider his findings as an observation and redesign the study to include a control group.
- D) He should prepare a research article that describes his study and its results for submission to a peer-reviewed nutrition journal.

20) Over a 2-year period, a team of scientists records the eating behaviors and physical activity patterns of a group of healthy 8-year-old children to determine whether these factors are associated with weight gain. This study is an example of a(n) _____ study.

- A) case-control
- B) retrospective
- C) prospective
- D) *in vitro*

21) A group of nutrition researchers interviews 100 adults who have heart disease to determine whether there is an association between consuming diets low in fiber during adolescence and developing heart disease in adulthood. This study is an example of a _____ study.

- A) case-control
- B) retrospective
- C) prospective
- D) macrosomatic

22) Which of the following kinds of studies would be the best to use when designing a scientific investigation to determine whether there is an association between consuming diets low in calcium during adolescence and developing osteoporosis (bone disease) in older adulthood?

- A) Single-blind study
- B) Experimental study
- C) Double-blindstudy
- D) Observationalstudy

23) A nutrition researcher would like to determine whether women who take fish oil supplements during pregnancy give birth to babies who score higher on basic intelligence tests when they are 5 years of age than the 5-year old children that were born to women who did not take the fish oil supplements during pregnancy. This kind of research is a(n) _____ study.

- A) double-blind
- B) prospective
- C) case-control
- D) *in vivo*

24) Which of the following kinds of studies would be the best to use to identify lifestyle factors that may be related to the development of liver cancer in an adult population?

- A) Single-blind study
- B) Experimental study
- C) Retrospectivestudy
- D) Double-blindstudy

25) Scientists who investigate lifestyle factors that influence the prevalence of obesity among different population groups are conducting a(n) _____ study.

- A) epidemiological
- B) technological
- C) pathological
- D) *in vitro*

26) Which of the following kinds of studies would be the best to use when investigating whether cigarette smoking influences weight gain?

- A) Cohort
- B) Single-blind
- C) Double-blind
- D) Conventional

27) Scientists in a Central American country are studying factors that may be associated with delayed physical growth among a group of low-income children. The children live in a region of the nation that has high levels of lead in drinking water. This study is an example of a(an) _____ study.

- A) epidemiological
- B) uncontrollable
- C) introspective
- D) conventional

28) The results of a research study indicate that those adults who consume the most sugar-sweetened beverages also have the highest rates of type 2 diabetes. These findings suggest there is a(n) _____ correlation between sugar-sweetened beverage consumption and risk for type 2 diabetes.

- A) direct
- B) indirect
- C) observational
- D) random

29) A group of scientists would like to determine lifestyle factors that are associated with the development of asthma among American children. Based on this information, the researchers should design a(n)_____ study.

- A) conventional
- B) *in vivo*
- C) double-blind
- D) epidemiological

30) Generally, epidemiological studies _____.

- A) establish causation without experimentation
- B) prove positive correlations
- C) cannot determine cause-and-effect relationships
- D) involve in vitro experimentation

31) Derek takes protein supplements before and after his workouts. He told his workout partner that he became 200% stronger within a couple of months after he added the supplements to his diet. His report about the effects of the supplements is an example of a(n) _____.

- A) factoid
- B) anecdote
- C) variable
- D) case report

32) Zack takes 500 mg of vitamin C daily. He advises his friends to take vitamin C supplements because, he claims, the vitamin protects him from cold viruses. His claim about the usefulness of the vitamin is an _____.

- A) *in vivo* report
- B) *in vitro* assumption
- C) introspection
- D) anecdote

33) Having a control group enables researchers to

- A) provide specific treatments to participants of the group.
- B) compare findings of the control group with those of the experimental group.
- C) avoid using harmful interventions when testing control subjects' responses.
- D) explore possible hypotheses for future research efforts.

34) Phil is a participant in a study designed to examine the effects of taking a dietary supplement on muscle tissue development. Phil suspects he is in the experimental group, because he is certain his muscles are bigger and stronger as a result of taking the product supplied by the researchers. When the study is completed, Phil learns that he did not receive the dietary supplement. Phil thinks the researchers made a mistake—he is certain his muscle mass increased while he took the supplement. According to this information, Phil's belief that his physical condition improved while he participated in the study is an example of _____.

- A) the placebo effect
- B) an anecdotal report
- C) human subject bias
- D) participant fatigue

35) Which of the following observations is an example of an inverse correlation?

- A) When members of a population increase their consumption of milk and milk products, their risk for bone fractures decreases.
- B) As children increase their physical activity level, they develop greater muscle mass than children who are less active.
- C) When pregnant women gain more weight than average, they are more likely to give birth to babies who are heavier than average.
- D) When children eat three or more servings of fruits and vegetables a day, their blood levels of vitamin C increase.

36) Which of the following observations is an example of a positive correlation?

- A) When members of a population consume fewer fruits and vegetables, their risk of high blood pressure increases.
- B) When a group of children increases their physical activity levels, the percentage of the children who contract cold infections decreases.
- C) When women gain less weight than average during pregnancy, the birth weights of their babies tend to be lower than average.
- D) When a population's intake of green tea increases, the percentage of lung cancer cases in that population decreases.

37) Which of the following observations is an example of an inverse correlation?

A) When a population increases its daily consumption of whole-grain products, the population's frequency of daily bowel movements increases.

B) Children who consume 3 cups of vitamin D-fortified milk daily develop stronger bones than children who drink fewer than 3 cups of vitamin D-fortified milk each day.

C) Women who smoke 5 or more cigarettes each day during pregnancy are more likely to give birth to underweight babies than women who smoke fewer than 5 cigarettes a day during pregnancy.

D) As a population's dietary intake of beta-carotene increases, the population's tissue levels of vitamin A increase.

38) Which of the following observations is an example of a positive correlation?

A) When teenage girls increase their intake of iron-rich foods, the percentage of girls who have iron deficiency decreases.

B) When a population consumes more fruits and vegetables, the percentage of people in that population with scurvy decreases.

C) When older adults increase their daily intake of vitamin D, the percentage of the adults that develop infections decreases.

D) When a group of 6-year-old children increase their physical activity level to 60 minutes a day, the children's muscle mass increases.

39) Which of the following observations is an example of a positive correlation?

A) When a population's vitamin D intake decreases, the percentage of people in the population that have healthy immune systems decreases.

B) When a population's intake of plant foods decreases, the percentage of obese people in that population increases.

C) When a population's level of vitamin C in white blood cells increases, the percentage of people in the population who develop scurvy decreases.

D) When a population's level of physical activity increases, the percentage of people who develop heart disease decreases.

40) Scientists study 200 adults who have type 2 diabetes, and 200 adults who have similar characteristics but do not have the disease. For 18 months, the researchers collect lifestyle information on all the study participants. According to the study's findings, the adults with type 2 diabetes were 25% less physically active than their counterparts who did not have type 2 diabetes. This is an example of a(n) _____ study.

- A) inverserelationship
- B) anecdotal
- C) prospective
- D) case-control

41) A researcher wants to identify lifestyle factors that increase the risk of stomach cancer in men. His study design involves enrolling 250 adult men who have stomach cancer, and 250 men who are cancer-free, but have similar characteristics and backgrounds as the men who have stomach cancer. The researcher collects and analyzes information about each participant's lifestyle. Based on this information, what kind of study is the researcher conducting?

- A) Case-control study
- B) Cohort study
- C) Experimental study
- D) *In vivo* study

42) Which of the following observations is an example of a negative correlation?

A) When a group of adults increases their intake of fruits and vegetables, the percentage of people in the group who have high blood levels of vitamin C levels increases.

B) When a group of people decreases their physical activity levels, the percentage of people in the group with healthy levels of body fat decreases.

C) When a group of older adults increases their intake of high-fiber foods, the percentage of people in the group who develop intestinal cancer decreases.

D) When a group of children eats more sugary foods, the percentage of children in the group who develop two or more decayed teeth increases.

43) Scientists conduct a study in which 100 adults with chronic diarrhea are divided into 2 groups with 50 people per group. One group is given a supply of yogurt that contains a certain kind of bacteria, and the other group is given yogurt that is bacteria-free. The study's participants and researchers do not know which group of subjects has the bacteria in the yogurt and which group does not. The scientists instruct the participants to eat the entire 8 ounces of yogurt once a day for a month and record their bowel habits. This is an example of a(n) _____ study.

- A) introspective
- B) double-blind
- C) uncontrolled
- D) hypothetical

44) A group of researchers wants to determine whether certain dietary factors are associated with the risk of attention deficit hyperactivity disorder (ADHD) in children. The scientists follow a group of 500 healthy newborn babies for 10 years and collect health information as well as dietary practices for each child. At the end of the study period, the scientists analyze the data for correlations between the children's dietary practices and their likelihood of being diagnosed with ADHD. This is an example of a _____ study.

- A) retrospective
- B) factorial
- C) prospective
- D) hypothetical

45) Researchers are conducting a study to determine the effects of vitamin C on the human immune system. The study involves providing pills that contain vitamin C to one group of human subjects, and pills that do not contain vitamin C or other active ingredients to another group of people. The pills that do not contain the vitamin are

- A) antidotes.
- B) supplements.
- C) placebos.
- D) probiotics.

46) Which of the following sources of information features peer-reviewed articles?

- A) *Men's Health Magazine*
- B) *National Geographic Magazine*
- C) *Journal of the Academy of Nutrition and Dietetics*
- D) *Nutrition and You: Health for Life*

47) The government agency that enforces consumer protection laws by investigating false or misleading health-related claims is the

- A) Federal Trade Commission (FTC).
- B) Environmental Protection Agency (EPA).
- C) Agricultural Research Service (ARS).
- D) Centers for Disease Control and Prevention (CDC).

48) Actress Lotta Talent appears in commercials endorsing the herbal supplement Hoodia for weight loss. Lotta Talent describes her own weight-loss successes with the supplement. Her endorsement is an example of a(n) _____.

- A) purport
- B) testimonial
- C) anecdote
- D) factoid

49) The professional football star Andre "The Man" McGraw claims the dietary supplement AminoProFix helped him build muscle mass quickly and safely. His endorsement of the product is an example of _____.

- A) unbiased reporting
- B) a scientifically valid claim
- C) a testimonial
- D) peer review

50) Which of the following websites is most likely a source of biased and unreliable nutrition information?

- A) stanford.edu
- B) dietsnomore4u.com
- C) eatright.org
- D) choosemyplate.gov

51) The host of a radio program makes a "red flag" claim about a nutrition-related product, because the claim is generally an indication that the information about the product is unreliable. The radio program host said,

- A) "According to the FDA, this product is classified a dietary supplement, because it contains vitamins."
- B) "All ingredients in this product have been scientifically tested and clinically proven to cure cancer."
- C) "This product contains sugar and certain artificial color and flavor additives."
- D) "The ingredients in this product are listed on the label."

52) A popular podcast includes interviews with "experts" on topics related to sports nutrition. If the podcast expert has the credentials _____, after his or her name, the expert is likely to be a reliable source of nutrition information.

- A) RDN
- B) MS
- C) DN
- D) MD

53) Which of the following statements is false?

- A) The Internet is generally a reliable source of nutrition information, because information posted at websites has been peer-reviewed.
- B) Websites with .edu in their addresses often provide reliable nutrition information.
- C) When evaluating claims for dietary supplements that appear on a website, be wary of products that include promises for quick remedies.
- D) In general, personal websites, such as blogs, are not reliable sources of nutrition information.

54) An online magazine article about weight-loss diets includes false information about the process of digestion that uses scientific-sounding terms to make it seem factual. The faulty information is an example of

- A) mislabeling.
- B) bias.
- C) pseudoscience.
- D) hypothesizing.

55) Which of the following statements is true?

- A) People who describe themselves as nutritionists are registered dietitian nutritionists.
- B) In general, registered dietitian nutritionists are reliable sources of nutrition information.
- C) Pseudoscience is the practice of medicine without proper training and credentials.
- D) In the United States, a person can obtain a PhD in nutrition only by graduating from an accredited institution of higher learning.

56) Which of the following statements is true?

A) The First Amendment of the U.S. Constitution often protects people who spread nutrition misinformation.

B) Pseudoscience is the scientific study of the causation and treatment of chronic diseases.

C) In the United States, only registered dietitian nutritionists can provide nutrition information.

D) Registered dietitian nutritionists are not required to update their knowledge of nutrition and dietetics regularly.

57) During an online interview, Dr. Ima Quack provides the following statement, "Most Americans suffer from nutritional-deficiency diseases and will develop cancer within the next 10 years because they are not taking my megavitamin formula therapy." Dr. Quack's statement is an example of a(n) _____.

A) medical hypothesis

B) scare tactic

C) intuitive deduction

D) personal observation

58) An online advertisement for a weight-loss product includes before and after photos of a woman who supposedly lost 50 pounds in 3 weeks while taking the product. The bottom of the ad includes the statement, "Results are not typical." This statement is an example of a(n) _____.

A) testimonial

B) anecdote

C) placebo

D) disclaimer

Answer Key

Test name: Stephenson 2

1) FALSE

2) TRUE

3) A

4) A

5) C

6) A

7) A

8) A

9) A

10) B

11) A

12) B

13) D

14) C

15) C

16) B

17) A

18) B

19) C

20) C

21) B

22) D

23) B

24) C

25) A

26) A

- 27) A
- 28) A
- 29) D
- 30) C
- 31) B
- 32) D
- 33) B
- 34) A
- 35) A
- 36) C
- 37) C
- 38) D
- 39) A
- 40) D
- 41) A
- 42) C
- 43) B
- 44) C
- 45) C
- 46) C
- 47) A
- 48) B
- 49) C
- 50) B
- 51) B
- 52) A
- 53) A
- 54) C
- 55) B
- 56) A

- 57) B
- 58) D