Practical - chapter 2-4 test bank questions

Introduction to Psychology I (Carleton University)

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Chapter 2 - The Research Enterprise in Psychology

1. Which goal of science is most closely associated with determining how to measure fear or identify lying?
   a. understanding and prediction
   b. measurement and description
   c. application and control
   d. testing and reporting

   ANSWER: b

2. What do we call any measurable conditions, events, characteristics, or behaviours that are controlled or observed in a study?
   a. confounds
   b. variables
   c. correlations
   d. hypotheses

   ANSWER: b

3. Forensic profilers use information about known serial killers to make statements about the likely next steps of a new killer and to anticipate a pattern of behaviour. Which goal of the scientific enterprise does this reflect?
   a. application and control
   b. measurement and description
   c. testing and reporting
   d. understanding and prediction

   ANSWER: d

4. Which goals of science are reflected in the use of reinforcement principles to modify a child's unruly behaviour?
   a. understanding and prediction
   b. application and control
   c. measurement and description
   d. testing and reporting

   ANSWER: b

5. What is a theory?
   a. a system of interrelated ideas used to explain a set of observations
   b. a preliminary proposal that has yet to be tested
   c. a statement of research results that have been proven correct
   d. a tentative statement about the relationship between two or more variables

   ANSWER: a

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6. There are multiple goals in science, and researchers move between goals at various points in their research. If a researcher has a lot of data about the measurement of fear reactions and uses those data to generate a theory about fear, how have the researcher's goals changed?
   a. from application to control
   b. from control to description
   c. from description to understanding
   d. from understanding to application

   ANSWER: c

7. If Dr. Smith has tested a hypothesis and the findings have failed to support the hypothesis, what influence will this have on Dr. Smith's theory?
   a. It will support the theory because hypotheses attempt to disprove theories.
   b. It will have little effect on the theory because hypotheses are merely predictions based on the theory.
   c. It will require that the theory be reconsidered because hypotheses allow the theory to be tested.
   d. It will cause the theory to be rejected because the hypothesis, and therefore the theory, is unsupported.

   ANSWER: c

8. Which of the following patterns is typical of theory construction?
   a. a gradual iterative process that is always subject to revision
   b. a process that results in concrete findings that are accepted by other scientists
   c. a standard step-like process that quickly moves toward the truth
   d. a circular process that is self-fulfilling

   ANSWER: a

9. Dr. Marqueta predicts that people who have received bad news will seek out other people because "misery loves company." Which of the following terms characterizes Dr. Marqueta's prediction about the behaviour of people?
   a. theory
   b. hypothesis
   c. analysis
   d. application

   ANSWER: b

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10. What is a hypothesis?
    a. a conclusion drawn from an experiment
    b. a system by which an experiment is designed
    c. a system of interrelated ideas used to explain a set of observations
    d. a tentative statement about the relationship between two or more variables

    ANSWER: d

11. Which of the following is a testable hypothesis?
    a. Fear is defined as an emotional reaction to a change in stimuli.
    b. Fear is an adaptive response that keeps us safe.
    c. Fearful children are less likely to be injured when playing at school.
    d. There are likely differences in how people experience fear.

    ANSWER: c

12. Dr. Licciardi predicts that if people are observed while they perform a complex task, they will make more errors. Which of the following terms is Dr. Licciardi's prediction an example of?
    a. theory
    b. inferential statistics
    c. hypothesis
    d. operational definition

    ANSWER: c

13. Dr. Malm predicts that if teachers ignore students who act up in class, fewer students will act up in class. What is the scientific term for Dr. Malm's prediction?
    a. operational definition
    b. inferential statistics
    c. hypothesis
    d. theory

    ANSWER: c

14. A researcher is measuring the heart rate of subjects in a study about anxiety, because heart rate changes in a predictable way when people are anxious. In this study, what is heart rate?
    a. negatively correlated with anxiety
    b. independent variable
    c. confounded variable
    d. operational definition of anxiety

    ANSWER: d

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15. Several researchers are working on different experiments that are designed to test whether a person's confidence can be changed over time. They want to be able to compare their results when they are done. They agree that they will all use the same test in order to measure confidence. Which of the following have the researchers done?
    a. They agreed to use the same independent variable.
    b. They agreed to use the same hypothesis.
    c. They agreed on an operational definition of confidence.
    d. They agreed to remove a confounding variable.

    ANSWER: c

16. Which of the following is an operational definition of aggression?
    a. Aggression is an emotional response rather than a cognitive response.
    b. Aggression is caused by fear.
    c. Aggression will lead victims to become more aggressive.
    d. Aggression is measured by the number of times one person hits another person.

    ANSWER: d

17. Dr. Dieringer wants to study attachment patterns in single-parent families. She plans to define the strength of attachment as the time it takes for the parent to respond when the infant starts to cry. Why is this definition important?
    a. It allows others to understand exactly what Dr. Dieringer means by "attachment."
    b. It allows Dr. Dieringer to generate a scientific hypothesis.
    c. It prevents research assistants from violating ethical guidelines for psychological research.
    d. It requires a double-blind research design.

    ANSWER: a

18. Terry has a theory and has formulated a testable hypothesis. What is the next step that Terry needs to take in the scientific method?
    a. choosing the statistical procedures
    b. selecting the research methods
    c. refining the theory based on the hypothesis
    d. collecting the data

    ANSWER: b

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19. Dr. Hessels is examining how different people respond to frightening events. She will have participants walk through a haunted house at a local amusement park, and each participant will be outfitted with a heart monitor. She will use the changes in heart rate as a measure of stress. What are two ways that such changes in heart rate can be described?
    a. an operational definition and an independent variable
    b. confounded variable and a physiological recording
    c. a physiological recording and an independent variable
    d. an operational definition and a dependent variable

    ANSWER: d

20. In the Featured Study, some individuals crossed a high, fear-arousing bridge, while others crossed a low, non-frightening bridge. In this study, what do we call the type of bridge?
    a. naturalistic observation
    b. dependent variable
    c. operational definition
    d. independent variable

    ANSWER: d

21. In the Featured Study, individuals who had just recently crossed a bridge were met by either a male or a female confederate of the researcher. What do you call the type of confederate in this study?
    a. confounding variable
    b. independent variable
    c. extraneous variable
    d. dependent variable

    ANSWER: b

22. The Thematic Apperception Test (TAT) is a projective test that contains ambiguous stimuli that are to be interpreted by the participant. In the Featured Study, participants crossed a bridge and then completed the TAT. How did the researchers use participants' responses to the TAT in this study?
    a. as a dependent variable
    b. as a confounding variable
    c. as an extraneous variable
    d. as an independent variable

    ANSWER: a

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23. Which of the following activities would be particularly useful for making someone more attractive to a potential date, according to the results of the Featured Study on the effects of arousal on attraction?
    a. a soothing evening of chamomile tea and soft jazz music
    b. doing something that you already enjoy to reduce anxiety
    c. an athletic event of moderate intensity
    d. a trip to an amusement park, followed by a horror movie

    ANSWER: d

24. Amanda tells you about her date with Brett the night before. They went to the local amusement park, where they rode roller-coasters, attempted a climbing wall, and went into the House of Horrors. At first, Amanda wasn't that interested in Brett, but by the end of the night she found herself very attracted to him. What insights could you provide, given the results of the Featured Study on the effects of arousal on attraction?
    a. She must really be in love, because people who experience fear-inducing stimuli often end up showing fear or revulsion to people nearby.
    b. She must have feelings for Brett, because she experienced arousal even while doing scary things.
    c. She may have interpreted her physical arousal as attraction, because the sensations are similar.
    d. She doesn't really have any interest in Brett, but her emotions were reversed by fear.

    ANSWER: c

25. During which stage of the scientific method would a researcher provide data to the general public?
    a. analyzing the data
    b. drawing conclusions
    c. reporting the findings
    d. debriefing participants

    ANSWER: c

26. What is a scientific journal?
    a. a personal diary kept by a scientist
    b. a detailed record of the daily procedures followed in conducting a study
    c. a periodical that publishes technical and scholarly articles
    d. a collection of biographies of famous scientists

    ANSWER: c

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27. A group of students are administered a series of written questions designed to assess their attitudes, opinions, and behaviour related to studying. What is this method called?
    a. a psychological test
    b. a questionnaire
    c. a paper-based interview
    d. a direct observation

    ANSWER: b

28. A psychologist monitors changes in the subject's heart rate as the subject watches a violent movie. What is this data-collection technique called?
    a. archival records
    b. direct observation
    c. psychological testing
    d. physiological recording

    ANSWER: d

29. Ted uses a personality test as one of the dependent measures in his study. What data-collection technique is Ted using?
    a. direct observation
    b. survey
    c. case study
    d. psychological test

    ANSWER: d

30. Jackson is working with a company to help it develop more effective training programs for its employees. He has spent a great deal of time reviewing all the documentation the company has about previous training opportunities it has provided for its employees. What research technique is Jackson using?
    a. meta-analysis
    b. direct observation
    c. psychological testing
    d. archival research

    ANSWER: d

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31. Of the following pairs, which pair contains two data-collection techniques that are most likely to involve direct contact between the researcher and the research participant?
    a. direct observation and interviews
    b. questionnaires and interviews
    c. archival research and questionnaires
    d. archival research and psychological testing

    ANSWER: a

32. Ling answered a series of written questions that asked about her attitudes and opinions on a number of current issues. What is this method of data collection called?
    a. a questionnaire
    b. archival research
    c. a standardized psychological test
    d. direct observation

    ANSWER: a

33. Which of the following is most likely to lead to the discarding of research results?
    a. creating operational definitions
    b. data analysis
    c. hypothesis generation
    d. publishing in a journal

    ANSWER: d

34. Which of the following is a general term for the manner in which a researcher collects empirical data?
    a. statistical procedure
    b. hypothesis testing
    c. research method
    d. archival recording

    ANSWER: c

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35. What does a researcher do when conducting an experiment?
    a. in-depth investigation of an individual subject through detailed documentation
    b. observation of behaviour as it occurs in its natural environment
    c. systematic observation or measurement of two variables to see whether there is an association between them
    d. manipulation of a variable under carefully controlled conditions and observation of whether there are changes in a second variable as a result

    ANSWER: d

36. Which approach is defined by manipulating a variable under carefully controlled conditions and observing the changes in a second variable?
    a. experimental approach
    b. survey approach
    c. testing approach
    d. correlational approach

    ANSWER: a

37. In an experiment, what do you call the variable that is controlled or manipulated by the researcher?
    a. stimulus variable
    b. dependent variable
    c. control variable
    d. independent variable

    ANSWER: d

38. What is an independent variable in an experiment?
    a. a variable that provides an alternative explanation for the results of the experiment
    b. a variable that is held constant across experimental conditions
    c. a variable that the experimenter believes will change in value because of systematic correlations that exist in the experiment
    d. a variable deliberately manipulated by the experimenter

    ANSWER: d

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39. A group of researchers investigates the effects of a vitamin supplement on animal memory. During the first part of the study, the animals learn to run a maze while they are not receiving the supplement; in the second part of the study, the animals learn to run a different maze while they are receiving the supplement. In each case, the researchers count how many trials it takes before the animals can run the maze pattern without making any errors. What is the independent variable in this study?
    a. the number of trials it takes to run the maze without making any errors
    b. the trials in which the supplement is used
    c. the presence or absence of the supplement in the animal's diet
    d. the two different mazes used

    ANSWER: c

40. A group of researchers wanted to determine if people will eat more food in a room that is decorated with red than in a room that is decorated with blue. Half the participants in this study ate in a red room and half ate in a blue room. The researchers then measured how much food was consumed in each of the two rooms. What is the independent variable in this study?
    a. the colour of the decorations in the room
    b. the amount of food consumed in the red room
    c. the amount of food consumed in the blue room
    d. the participants in each group

    ANSWER: a

41. Researchers who were studying plant growth raised plants in two separate rooms. One room had taped conversations playing 24 hours a day; the other room was silent. The researchers found that the plants grew better in the room that had the conversations playing. In this study, what would you call the type of room (silent versus conversation)?
    a. placebo
    b. independent variable
    c. dependent variable
    d. extraneous variable

    ANSWER: b

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42. Researchers who were studying memory had participants learn a list of words after consuming a soft drink with caffeine or a decaffeinated version of the same soft drink. The researchers then counted the number of words that were recalled from the list. In this study, what would you call the type of beverage (caffeinated or decaffeinated)?
    a. extraneous variable
    b. dependent variable
    c. confounding variable
    d. independent variable

    ANSWER: d

43. What is a dependent variable?
    a. a variable that changes value because of the systematic manipulation in an experiment
    b. a variable deliberately manipulated by an experimenter
    c. a variable that the experimenter is depending on to cause something to happen in an experiment
    d. a variable held constant across experimental conditions

    ANSWER: a

44. Researchers tested the physical coordination skills of 25-year-old males who had been sleep deprived for 24, 36, or 48 hours. In this study, what is the dependent variable?
    a. the length of time the participants had been sleep deprived
    b. the physical coordination of the control group
    c. the male-only group of participants
    d. the physical coordination skills of participants

    ANSWER: d

45. A group of researchers wants to determine if people are more likely to follow directions if the person giving the directions is in a uniform. Half the participants are directed to a parking spot by a uniformed security guard; the other half are directed to a parking spot by an individual wearing blue jeans and a T-shirt. In this study, what is the dependent variable?
    a. the parking lot
    b. the number of participants who park in the spot they are directed to
    c. the type of clothing worn by the person giving the directions
    d. the directions given

    ANSWER: b

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46. A group of researchers conducts a study to determine if a child's performance is affected by the presence of other children. First, the children are taken to a room with no other children and timed while they complete a puzzle. Later, the same children are taken to a room with four other children and timed while they complete a similar puzzle. In this study, what do you call the length of time it takes to complete the puzzle?
    a. extraneous variable
    b. control variable
    c. dependent variable
    d. independent variable

    ANSWER: c

47. An industrial designer wants to determine if the new design for a piece of office equipment will result in fewer errors. The designer sets up a machine with the old design in one room, and a machine with the new design in a second room. He counts how many errors are made using each of the two machines. In this study, what do you call the number of errors made?
    a. extraneous variable
    b. dependent variable
    c. independent variable
    d. control variable

    ANSWER: b

48. If we view an experiment as an attempt to establish a cause–effect relationship, which of the following can be viewed as the "cause" in an experiment?
    a. the independent variable
    b. the dependent variable
    c. the hypothesis
    d. the theory

    ANSWER: a

49. A researcher found that clients who were randomly assigned to same-gender groups participated more in group therapy sessions than clients who were randomly assigned to mixed-gender groups. In this experiment, what is the dependent variable?
    a. whether or not the group was mixed-gender
    b. how much the clients' mental health improved
    c. the clients' attitudes toward group therapy
    d. the amount of participation in the group therapy sessions

    ANSWER: d

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50. Nula is conducting a study in which one group is exposed to loud music while completing a writing assignment and the other group has quiet conditions. Further, Nula examines the effect of gender within these groups. Therefore, she is examining the effects of both noise and gender on participants' performance on a writing task. Which of the following reflects the type of variables present in this study?
    a. one independent variable and two dependent variables
    b. one control variable and two independent variables
    c. one independent variable, one control variable, and one dependent variable
    d. two independent variables and one dependent variable

    ANSWER: d

51. What differs between an experimental group and a control group?
    a. The characteristics of the participants.
    b. Only the experimental group is measured for the dependent variable.
    c. Nothing except the experience of the independent variable.
    d. Only the control group experiences the independent variable.

    ANSWER: c

52. In an experiment designed to test memory processes, one group was asked to group the items on a list into categories while trying to memorize them. A second group was told to rhyme each of the words on the list. In this study, which group is the control group?
    a. the group that was told to categorize
    b. the group in which the participants remember the most items from the list
    c. the group that was told to rhyme
    d. a third group that was not given special instructions

    ANSWER: d

53. In a study designed to test the effects of a new drug developed to treat Alzheimer's disease, half the patients were given the actual drug while the other half of the patients were given a placebo (sugar pill). In this study, which group is the control group?
    a. the group that showed no evidence of an improvement in their memory
    b. the group that received the actual drug
    c. the group that received the placebo
    d. no control group in this study

    ANSWER: c

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54. Phong and Mikaela both take part in a research study that is investigating the effects of sleep deprivation on reaction time. Phong is kept awake for 24 hours straight, while Mikaela follows her normal sleep routine. Which group is Phong in?
    a. the independent variable group
    b. the control group
    c. the dependent variable group
    d. the experimental group

    ANSWER: d

55. What is the purpose of the control group?
    a. to isolate the effect of the independent variable on the dependent variable
    b. to correlate the dependent variable with the independent variables
    c. to make statistical significance more likely
    d. to make the experiment more complex

    ANSWER: a

56. A researcher wants to see if a protein-enriched diet will enhance the maze-running performance of rats. One group of rats is fed the high-protein diet for the duration of the study; the other group continues to receive standard rat food. What types of groups are represented in this study?
    a. The high-protein group is an experimental group; the standard food group is a control group.
    b. Both groups are experimental groups.
    c. Both groups are control groups.
    d. The high-protein group is a control group; the standard food group is an experimental group.

    ANSWER: a

57. A researcher has children watch 30 minutes of violent television, and then counts the number of times they hit each other afterward in a one-hour play period as a measure of aggression. Which of the following can you conclude from this study?
    a. TV violence causes violent behaviour in children.
    b. TV violence is correlated with violent behaviour in children.
    c. You can't conclude anything until you know the rates of violence displayed by children.
    d. You can't conclude anything because you have nothing to compare to the aggression after the TV viewing.

    ANSWER: b

58. A group of researchers wanted to determine whether children would behave more aggressively after watching television programming. One third of the children in the study watched a violent television show and one third of the children watched a non-violent television program. If the remaining children are in a control group, what should happen to them?
    a. Half should watch a violent show and half should watch a non-violent show.
    b. They should listen to the radio.
    c. They should be the group monitored for violent behaviour.
    d. They should not watch a television show.

    ANSWER: d

59. Jack believes that patrons in his bar will be more likely to leave a tip if the tip jar already has some money in it. To test this belief, he has the tip jar empty about half the time when a customer approaches the bar; the rest of the time he ensures there is at least $5.00 in the jar when a customer approaches. In Jack's experiment, which is the control group?
    a. the patrons who see an empty tip jar
    b. all the patrons who leave the bar without tipping
    c. the patrons who see a tip jar that contains at least $5.00
    d. all the patrons who leave a tip when they leave the bar

    ANSWER: a

60. Dr. Prutherow believes that people who are under stress will develop more colds than people who are not under stress. When he randomly selected ten participants and exposed them to high levels of stress, he found that nine of the participants developed colds. What critical piece is missing from Dr. Prutherow's study?
    a. a dependent variable
    b. a testable hypothesis
    c. a group without stress
    d. a group without colds

    ANSWER: c

61. What is an extraneous variable?
    a. the same thing as a dependent variable
    b. a variable, other than the independent variable, that may influence the dependent variable
    c. a variable that is completely irrelevant to both the independent and dependent variables
    d. a variable that affects the control group but not the experimental group

    ANSWER: b

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62. Mandy thinks that people who work hard will always succeed. She grew up in a very wealthy neighbourhood and noticed that all of her friends who worked hard became successful. In this example, which of the following is true of wealth and hard work?
    a. They are correlated.
    b. They are confounded.
    c. They are independent.
    d. They are dependent.

    ANSWER: b

63. A researcher is studying two groups of children. One group includes children who are 10 years old and the other group includes children who are 5 years old. Which of the following variables would be confounded with age in this study?
    a. gender
    b. height
    c. aggression
    d. income

    ANSWER: b

64. Diaz conducts a decision-making experiment to determine if people reason more logically when they have more time to decide. All the participants who are under 40 are allowed 15 minutes to reach a decision about a problem; all the participants who are over 40 are allowed 20 minutes to reach a decision about the same problem. What is the problem with this experimental design?
    a. The age of the participants is confounded with the independent variable.
    b. There are two control groups and no experimental group.
    c. There is no dependent variable in the experiment.
    d. The time allowed for the decision is confounded with the independent variable.

    ANSWER: a

65. Which of the following is most important for reducing the likelihood of extraneous variables?
    a. experimental methods
    b. correlational methods
    c. random assignment
    d. random sampling

    ANSWER: c

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66. What is random assignment?
    a. Subjects are free to choose which group or condition they would like to be in.
    b. All variables have an equal chance of being assigned to the experimental condition.
    c. All people have an equal likelihood of being selected from the study.
    d. All subjects have an equal chance of being assigned to any of the groups or conditions.

    ANSWER: d

67. Dr. Kalmagura plans on introducing a new exam review procedure in his chemistry classes. To check the effectiveness of the new procedure, he is going to have half his students try the new technique for one semester, while the remaining students review in the way they have always done in the past. He asks each student to decide whether they would like to use the new technique or the standard technique. What procedure is illustrated in this example?
    a. a double-blind research design
    b. informed consent in research
    c. the use of non-random assignment
    d. naturalistic observation

    ANSWER: c

68. Braeden received a poor performance evaluation in his job last year. Since then, Braeden has started working through his lunch hour, taken on four special projects, and enrolled in night classes to upgrade his computer skills. Why will it be hard for Braeden to figure out the cause if he receives a better evaluation at his next performance?
    a. He failed to use a double-blind procedure to test his hypothesis.
    b. None of the actions he took are likely to be related to his overall job performance.
    c. The three actions he took are confounded with each other.
    d. He didn't formulate a research hypothesis before implementing the changes.

    ANSWER: c

69. In a study of the effect of fatigue on task performance, participants were asked to complete a series of puzzles. One day, all participants completed puzzles after 24 hours without sleep. On another day, the same participants completed puzzles after sleeping for at least eight hours. What research design is used in this study?
    a. between-subjects design
    b. within-subjects design
    c. single-blind design
    d. interaction design

    ANSWER: c

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70. Dr. Shingwauk designed an experiment in which participants listened to a persuasive speech delivered either by a very tall person or a person of average height. In addition, the speeches were delivered by people wearing either business clothes or casual clothes. Dr. Shingwauk asked listeners to fill out a survey about impressions of the speaker's credibility. In this study, what is Dr. Shingwauk looking to determine?
    a. Does a double-blind procedure lead to greater credibility of speakers, independent of the effects of appearance?
    b. Do height and clothing style interact to influence judgments of credibility?
    c. Does persuasion interact with any other factors?
    d. Does persuasion influence our perception of height and clothing?

    ANSWER: b

71. What does it mean when there is an interaction between two variables?
    a. The measurement of the dependent variable depends on the effect of the independent variable.
    b. The measurement of one dependent variable gets added to the measurement of another.
    c. The effects of one independent variable get added to the effects of another.
    d. The effects of one independent variable depend on the effects of another.

    ANSWER: d

72. What is the main advantage associated with the experimental method?
    a. its precise control
    b. its ability to be generalized to multiple contexts
    c. its ability to duplicate real life in the laboratory
    d. its appeal to participants

    ANSWER: a

73. Which research method gives researchers the ability to infer a cause-and-effect relationship?
    a. correlational
    b. experimental
    c. case history
    d. empirical

    ANSWER: b

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74. Which of the following is a disadvantage of the experimental method?
    a. Experiments often can't be done for practical or ethical reasons.
    b. Only one variable can be studied at a time.
    c. Length of time necessary to complete the study.
    d. Inability to generate cause-and-effect conclusions.

    ANSWER: a

75. Shelley is a researcher who studies disabilities as a result of head injuries. She has chosen to use non-experimental methods because of some of the limitations of experiments. Which of the following limits would most likely cause problems for Shelley's research?
    a. It is not ethical to conduct experiments with people with disabilities.
    b. People cannot be randomly assigned to a group that experiences a head injury.
    c. Disability cannot be operationally defined.
    d. Experiments cannot be used to study interaction effects.

    ANSWER: a

76. What do researchers do when conducting descriptive or correlational research?
    a. They simultaneously manipulate two or more independent variables.
    b. They systematically describe patterns of behaviour and discover relationships among variables.
    c. They manipulate a variable under carefully controlled conditions and observe whether there are changes in a second variable as a result.
    d. They expose subjects to two closely related treatment conditions.

    ANSWER: b

77. Donnie wants to know whether attractive waiters make more tips. He has a group of people rate the attractiveness of five different waiters, and he gets the waiters to tell him how much money they make in tips every night for a month. What type of research design has Donnie used?
    a. quasi-experimental design
    b. correlational design
    c. experimental design
    d. case study design

    ANSWER: b

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78. What do naturalistic observation, case studies, and surveys all have in common?
    a. They can show causal relationships.
    b. The results obtained cannot be analyzed statistically.
    c. They do not directly observe behaviour.
    d. They do not manipulate the variables under study.

    ANSWER: d

79. A researcher goes to a playground for an hour each day for two weeks and makes notes when children are playing together. He records the number of times that a girl and a boy are playing together, when boys play only with other boys, and when girls play only with other girls. Which research method is the researcher using?
    a. experiment
    b. naturalistic observation
    c. correlation
    d. case study

    ANSWER: b

80. What do we call recording all instances of an event for a particular time period (such as how many times an older brother strikes his younger brother during a given week) without the subjects' awareness?
    a. naturalistic observation
    b. compiling a case study
    c. creating an archive
    d. correlational research

    ANSWER: a

81. You are sitting on a park bench in a major metropolitan area from 7 a.m. to 7 p.m. and you note the number of people who walk by, whether or not they litter, and their sex. What type of research method are you using?
    a. naturalistic observation
    b. case study
    c. correlation
    d. casual observation

    ANSWER: a

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82. A group of researchers wanted to investigate allegations of sexual harassment on a company's assembly line. To make their observations, the researchers took jobs working on the assembly line and pretended to be new employees. What type of research is being conducted in this example?
    a. correlational research
    b. case study
    c. unethical research
    d. naturalistic observation

    ANSWER: d

83. A local hospital wanted to assess the way its patients were being treated. The hospital hired several researchers to act as patients and record the way hospital personnel handled the admitting and preliminary evaluation procedures. What sort of research is being conducted in this example?
    a. naturalistic observation
    b. correlational research
    c. reactivity
    d. case study

    ANSWER: a

84. Jolyn believed that there were gender differences in driving habits. To test this hypothesis, she stood near a quiet intersection. Jolyn recorded the gender of each driver who approached a stop sign, and also whether the individual came to a complete stop before proceeding into the intersection. What sort of research is Jolyn conducting?
    a. psychological testing
    b. naturalistic observation
    c. experiment with two dependent variables
    d. case study research

    ANSWER: b

85. What is a distinct advantage of naturalistic observation?
    a. It allows behaviour to be studied in realistic settings.
    b. It allows for random sampling.
    c. It reduces reactivity among participants.
    d. There is a wider range of statistical procedures that can be used.

    ANSWER: a

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86. Which of the following is a major problem with naturalistic observation?
    a. It works well with animals but is virtually useless for studying human behaviour.
    b. Researchers have a difficult time determining whether a setting is truly natural.
    c. It is limited by the constraints of random sampling and random assignment.
    d. It is difficult to observe behaviour without having an influence on that behaviour.

    ANSWER: d

87. Stephanie is observing a group of adolescents at the mall and documenting their rate of swearing. The group keeps looking over at Stephanie and pointing at her, and they get louder and more obnoxious the longer she observes them. Which of the following terms describes Stephanie's effect on the group?
    a. demand characteristics
    b. disrupting
    c. reactivity
    d. confounding

    ANSWER: c

88. Which of the following techniques is most likely to prove useful in determining why one particular child is afraid to go to school?
    a. descriptive study
    b. case study
    c. naturalistic observation
    d. experiment

    ANSWER: b

89. Dr. Kincaid was interested in the topic of musical genius. In the initial part of the investigation, Dr. Kincaid carefully observed and compiled detailed files on three individuals who were musical geniuses. What sort of research is Dr. Kincaid conducting?
    a. correlational
    b. survey
    c. naturalistic observation
    d. case study

    ANSWER: d

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90. In which of the following would there be the greatest risk of effects of subjectivity and selective attention?
    a. conducting a placebo-control trial
    b. compiling a case study
    c. running experimental studies
    d. conducting surveys

    ANSWER: b

91. NASA wanted to know if extended periods of weightlessness would have an impact on long-term circulatory function. The agency located seven former astronauts who had spent more than one month in space under conditions of weightlessness, and tested all aspects of their cardiovascular function. What sort of research did NASA conduct in this situation?
    a. experimental research
    b. survey research
    c. case study research
    d. naturalistic observation

    ANSWER: c

92. One of your friends is writing a research paper and wants to obtain information about the depth of personal information people typically reveal during a first date. Directly observing a large number of people during a first date will be difficult, so your friend asks for your advice on the best way to collect this type of data. What would be the best research option for your friend to use?
    a. case study
    b. survey
    c. archival research
    d. double-blind observational study

    ANSWER: b

93. Estavan received a questionnaire in the mail asking about his general buying habits. He was asked to identify the specific products that he typically buys, and the amount of each product that he typically uses. Which type of research will Estavan have taken part in if he completes the questionnaire and returns it?
    a. archival research
    b. naturalistic observation
    c. survey method
    d. case study approach

    ANSWER: c

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94. Which of the following types of research allows psychologists to study the widest range of phenomena?
    a. descriptive research
    b. introspective research
    c. developmental research
    d. experimental research

    ANSWER: a

95. Trevor plans to study the relationship between individuals' responses to highly stressful situations and their overall health. He decides he must use correlational research, rather than experimental research, to investigate this problem. What is the most likely reason that Trevor chose a correlational method?
    a. Correlational studies have higher internal validity than experiments.
    b. Correlational research can be used to investigate factors that would be unethical to manipulate in an experimental study.
    c. Correlational studies tend to be more accurate than experiments.
    d. Correlational research can be used to study direct relationships, but not inverse or indirect relationships.

    ANSWER: b

96. Maria plans to study the relationship between self-esteem and being raised in a single-parent or a two-parent family. She decides she must use correlational research, rather than experimental research, to investigate this problem. What is the likely reason that Maria chose a correlational method?
    a. Correlational studies can be used to study either positive or negative relationships, whereas experiments can be used to study only positive relationships.
    b. Correlational studies have higher internal validity than experiments.
    c. Correlational methods tend to be more accurate than experiments.
    d. Correlational studies can be used to investigate factors that would be impossible to manipulate in an experimental study.

    ANSWER: d

97. What is perhaps the greatest disadvantage or limitation associated with descriptive research methods?
    a. the inability to identify cause-and-effect relationships
    b. the fact that these methods usually focus attention too narrowly on a single variable
    c. the restriction to very small samples
    d. an insensitivity to ethical concerns

    ANSWER: a

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98. Eric just completed a correlational study, and his results reveal that people who take more showers have higher income. Eric wonders whether certain types of jobs might both pay more and cause people to get dirtier. Which of the following terms reflects Eric's interpretation of his results?
    a. reactivity
    b. third variable problem
    c. sampling bias
    d. interaction effects

    ANSWER: b

99. Your professor handed out a list of all the grades for all four exams in your class. In which of the following situations would you use descriptive statistics?
    a. You want to know your average in this course.
    b. You want to know whether your score on the most recent exams is significantly higher than your previous exams.
    c. You want to know whether your exam score is significantly higher than your friend's.
    d. You want to know whether your grade in this course is higher than your grade in another course.

    ANSWER: a

100. What type of statistics would you use if you wanted to summarize and organize your data?
    a. computational
    b. mathematical
    c. descriptive
    d. inferential

    ANSWER: c

101. What is the score that falls exactly in the centre of a distribution of scores, such that half the scores fall below that score and half the scores fall above it?
    a. median
    b. mean
    c. standard deviation
    d. mode

    ANSWER: a

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102. What is the median of the following set of numbers?: 1, 2, 2, 3, 4, 4, 4
    a. 1
    b. 2
    c. 3
    d. 4

    ANSWER: c

103. Kaley added up the amount of money she made on four paycheques and then divided that number by four. Which of the following measures of central tendency did Kaley use?
    a. mode
    b. mean
    c. median
    d. midpoint

    ANSWER: b

104. What does the mode of a group of scores represent?
    a. its association with another group of scores
    b. the midpoint
    c. its central tendency
    d. its variability

    ANSWER: c

105. Tian tells you that 17 out of the 30 students enrolled in his English class scored exactly 62 points on the last exam. Which of the following states the same concept?
    a. The standard deviation for that exam was 62 points.
    b. The mode for that exam was 62 points.
    c. The mean for that exam was 62 points.
    d. The median for that exam was 62 points.

    ANSWER: b

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106. When the scores for a recent chemistry exam were calculated, the mean was 60 and the median was 65. Later, the professor discovered that one score had been recorded incorrectly; it had been entered into the computer as a 5, instead of as a 50. What will happen to the mean and median once the score is entered correctly?
    a. The mean for the exam will change, but the median will stay the same.
    b. Neither the mean nor the median for the exam will be affected.
    c. The median for the exam will change, but the mean will stay the same.
    d. Both the mean and the median for the exam will change.

    ANSWER: a

107. Carla earned 78 points on her statistics exam. Ten of the students in her class earned higher scores than she did, and ten students earned lower scores than she did. Based on this information, what can you conclude about Carla's score?
    a. It is the mean for her class.
    b. It is the median for her class.
    c. It is the standardized score for her class.
    d. It is the mode for her class.

    ANSWER: b

108. In Margaritte's sociology discussion group, four of the five students are between the ages of 19 and 23; the fifth student is 54 years old. Which statistic should Margaritte use if she wants to report the statistic that best represents the typical age for her discussion group?
    a. The mean or the median because these numbers are typically the same.
    b. The mean or the standard deviation so that additional statistics can be calculated.
    c. The median or the mode because these numbers will best represent the typical class member.
    d. The mean or the mode because these numbers are not affected by extreme scores in the distribution.

    ANSWER: c

109. Which of the following can be said about a distribution of scores where the mean is lower than the median and mode?
    a. The median and mode must be the same.
    b. The standard deviation is high.
    c. The distribution is positively skewed.
    d. The distribution is negatively skewed.

    ANSWER: d

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110. What does the standard deviation tell you about the variability in a data set?
    a. When variability is high, the standard deviation is small.
    b. The standard deviation does not reflect the variability in the data set.
    c. A large standard deviation means that there is a great degree of variability in the data set.
    d. As variability increases in a data set, the standard deviation becomes more variable as well.

    ANSWER: c

111. Dr. Greyeagle calculated descriptive statistics for the age of residents in a nursing home. She reported the mean age as 75 years, with a standard deviation of 10 years. Later she found that she had made an error in her calculations. One resident's age was entered as 27 when it should have been 72. What will happen to the standard deviation when this correction is made?
    a. It will decrease.
    b. It will increase.
    c. It will not change.
    d. It will increase, but only if the mean remains the same.

    ANSWER: a

112. Carmella is in a class where the scores on the second midterm exam ranged from 75 to 85 points. Conrad is taking the same course, but in his section the scores ranged from 50 to 98 points. In this example, what can be said about the standard deviations in the two classes?
    a. The standard deviation will be lower in Carmella's class.
    b. The standard deviations will be negatively correlated.
    c. The standard deviation will be less predictable in Carmella's class.
    d. The standard deviation will be higher in Carmella's class.

    ANSWER: a

113. If the distribution of test scores for a midterm is normal, approximately what percentage of the class should have a score that falls within two standard deviations of the mean?
    a. 34 percent
    b. 68 percent
    c. 95 percent
    d. 99 percent

    ANSWER: c

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114. Terry's midterm test score falls at the 10th percentile. How many classmates scored the same or lower than Terry?
    a. 0 percent
    b. 10 percent
    c. 90 percent
    d. 100 percent

    ANSWER: b

115. If you wanted to predict test scores based on amount of time spent studying, which statistic would you need to use?
    a. variance
    b. correlation coefficient
    c. standard deviation
    d. central tendency

    ANSWER: b

116. What does the correlation coefficient measure?
    a. the central tendency
    b. the degree of relationship between two variables
    c. the difference between the largest and smallest scores in a data set
    d. the amount of variability in a data set

    ANSWER: b

117. What would we likely find if we were to measure the height and weight of 100 adult women and calculate a correlation coefficient on the data??
    a. Height and weight are negatively correlated.
    b. Height and weight are increasingly correlated.
    c. Height and weight are positively correlated.
    d. Height and weight are uncorrelated.

    ANSWER: c

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118. Suppose a researcher discovered a +0.87 correlation between the length of a person's toes and the number of shoes the person owns. In general, who would you predict to own the most shoes?
    a. people with large toes
    b. people with medium-sized toes
    c. people with either very large or very small toes
    d. people with small toes

    ANSWER: a

119. Dr. Macator predicts that people will act more aggressively during the heat waves of summer than they will during the cold spells of winter. Which of the following reflects Dr. Macator's prediction?
    a. Temperature and aggression are uncorrelated.
    b. Temperature and aggression are negatively correlated.
    c. Temperature and aggression are positively correlated.
    d. Temperature is independently correlated with aggression.

    ANSWER: c

120. The Ministry of Health found that people who used diet drugs had more heart valve defects than people who had not taken any diet drug. Which of the following reflects this finding?
    a. Heart valve defects and diet drug use are independent of one another.
    b. Heart valve defects are positively correlated with the use of diet drugs.
    c. Heart valve defects and use of diet drugs are negatively correlated.
    d. Heart valve defects and diet drug use are interactive variables, with no correlational relationship.

    ANSWER: b

121. Imagine that the personality traits of openness and extraversion are positively correlated. Andrea just took two tests that measure openness and extraversion, respectively. If Andrea's score in openness is extremely low, what would you predict about her extraversion score?
    a. She would most likely score at the low end of the extraversion scale.
    b. It is impossible to predict how she is likely to score on the extraversion scale without more information.
    c. Her extraversion score would be corrected based on her openness score.
    d. She would most likely score around the mean of the extraversion scale.

    ANSWER: a

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122. Dr. Vishnu has found that students who score higher than 85 percent on the first midterm tend to earn scores of 75 percent or better on the final exam, while students who score less than 60 percent on the first midterm often end up with a failing grade on the final exam. What can be said about the relationship between scores?
    a. Students who do poorly on the first midterm do not improve.
    b. Students who do poorly on the first midterm give up and study less for the final.
    c. Scores on the first midterm and the final exam are positively correlated.
    d. Scores on the first midterm and the final exam are negatively correlated.

    ANSWER: c

123. Suppose a researcher discovered a strong negative correlation between the length of people's hair and the amount of money they paid for their automobile. In general, what could you predict about people's hair length if you know that they paid very little for their cars?
    a. They have very long hair.
    b. They have either very long or very short hair.
    c. They have mid-length hair.
    d. They have very short hair.

    ANSWER: a

124. Mice who received caffeine in their diets made fewer errors in a maze-running task than mice who had not received caffeine. What does this suggest about the use of caffeine and maze-running errors among mice?
    a. They are positively correlated.
    b. They are weakly correlated.
    c. They are uncorrelated.
    d. They are negatively correlated.

    ANSWER: d

125. As the size of a crowd increases, people are less likely to help someone who is in distress. What is the relationship between the number of people in a crowd and the likelihood of helping?
    a. They are negatively correlated.
    b. They are indirectly correlated.
    c. They are uncorrelated.
    d. They are positively correlated.

    ANSWER: a

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126. Imagine that the personality traits of conscientiousness and extraversion are negatively correlated. Vladimir's scores fit the typical pattern. If Vladimir's score in conscientiousness is extremely low, how would he score on extraversion?
    a. He would probably score close to the median on the extraversion scale.
    b. He would most likely score at the low end of the extraversion scale.
    c. It is impossible to predict how he is likely to score on the extraversion scale without more information.
    d. He would most likely score at the high end of the extraversion scale.

    ANSWER: d

127. Suppose that students who work fewer hours at their jobs tend to have higher grade point averages and also tend to get more sleep. What would the correlation coefficient be if we were to correlate the two variables of grade point average and number of hours of sleep?
    a. greater than 1, but less than 2
    b. equal to 0
    c. less than zero, but greater than –1
    d. greater than 0, but less than 1

    ANSWER: d

128. Dr. Hackle has found that no matter how students score on the first midterm, all the students in her class tend to score between 75 percent and 80 percent on her final exam. Which of the following values would best represent the correlation between the grades?
    a. near 1
    b. near –1
    c. near 0
    d. near 2

    ANSWER: c

129. What is represented by a correlation coefficient of zero?
    a. absence of a linear correlation between two variables
    b. a negative correlation between two variables
    c. a perfect linear correlation between two variables
    d. a positive correlation between two variables

    ANSWER: a

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130. Of the following, which correlation coefficient indicates the strongest relationship between the two variables being measured?
    a. +3.45
    b. +0.65
    c. 0.00
    d. –0.89

    ANSWER: d

131. Of the following, which correlation coefficient indicates the weakest relationship between the two variables being measured?
    a. +0.95
    b. +0.01
    c. –0.69
    d. –4.50

    ANSWER: b

132. Of the following correlation coefficients, which one would allow the most accurate predictions of one variable based on the other variable?
    a. +1.23
    b. +0.65
    c. 0.00
    d. –0.79

    ANSWER: d

133. Of the following correlation coefficients, which one would yield the LEAST accurate predictions of one variable based on the other variable?
    a. +0.99
    b. +0.17
    c. 0.00
    d. –0.49

    ANSWER: c

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134. Dr. Zelke surveys 50 university students to discover the relationship between textbook price and ratings of readability. Dr. Zelke finds that for these two variables, the correlation coefficient is –0.70. What does this indicate?
    a. More expensive books tend to receive lower readability ratings than less expensive books.
    b. Increasing the price of a book will lead people to think that it is more readable.
    c. Less expensive books tend to receive lower readability ratings than more expensive books.
    d. There is no relationship between book price and ratings of readability.

    ANSWER: a

135. What could we conclude if the correlation coefficient between amount of exposure to television violence and aggressive behaviour was found to be +0.43?
    a. Watching television violence tends to cause aggressive behaviour.
    b. People who watch the most television violence tend to be the most aggressive.
    c. Television violence is uncorrelated with aggressive behaviour.
    d. People who watch the most television violence tend to be the least aggressive.

    ANSWER: b

136. Which of the following statements about correlations is NOT correct?
    a. A and B correlate +1.00; therefore, they are causally related.
    b. A and B correlate +1.00; if you know A, you can predict B without error.
    c. A and B correlate –1.00; if you know A, you can predict B without error.
    d. A correlation of +0.90 gives better predictability than a correlation of +0.60.

    ANSWER: a

137. Which of the following situations is an example of using inferential statistics?
    a. A public poll reports that 75 percent of the population supports picnics.
    b. The government reports that it must implement a 5 percent cut in spending.
    c. The national bank reports that consumer debt is significantly higher than last year at this time.
    d. A teacher indicates that most students scored between 55 and 65 on the test.

    ANSWER: c

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138. You've been keeping records of your car's gas consumption for the past three years. In which of the following situations would you use inferential statistics?
    a. You want to know your car's average gas consumption.
    b. You want to know whether this week's gas consumption is typical for your car.
    c. You want to know the highest and lowest consumption across the three years.
    d. You want to know whether winter consumption is significantly different from summer consumption.

    ANSWER: d

139. What do we call statistics that are used to interpret data and draw conclusions?
    a. significant
    b. descriptive
    c. numerical
    d. inferential

    ANSWER: d

140. Which type of statistic allows us to determine whether the results of an experiment occur due to chance?
    a. standard deviation
    b. measures of central tendency
    c. descriptive
    d. inferential

    ANSWER: d

141. Paul just completed data analysis for his recent study, and the inferential statistics reveal that there is a 0.04 probability that his results occurred by chance. What can Paul state about his study?
    a. The results are meaningful.
    b. The results are statistically significant.
    c. The results are inconclusive.
    d. The results are unreliable.

    ANSWER: b

142. What does it mean to say that the results of an experiment are "statistically significant"?
    a. The results had practical significance.
    b. Differences in measurements of the dependent variable resulted from chance variations.
    c. Different results for the experimental and control groups were not due to chance.
    d. The results were important enough to publish.

    ANSWER: c

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143. Paulo tells you that he just completed an experiment in his botany class, and the results he obtained were statistically significant. What does this mean?
    a. His results were likely to be caused by a single strong variable.
    b. His results were unlikely to be a consequence of chance variations in his sample.
    c. His results are important and will likely have an impact in the field of botany.
    d. His results will be of interest to people, even if they are not botanists.

    ANSWER: b

144. Masali conducted a study in which she measured the response time for males and females to complete a spatial task. She found that the mean response time was 1.48 minutes for males and 1.63 minutes for females. What must Masali do to be confident that an actual difference exists between males and females?
    a. calculate a correlation coefficient
    b. calculate an inferential statistic
    c. obtain a larger sample
    d. evaluate the descriptive statistics

    ANSWER: b

145. Dr. Arnold conducted a study where he found significant results. Dr. Bernhardt found those results interesting, and he conducted the same study in his own lab, but did not find significant results. After discussing their results at a conference, the two researchers found a few minor differences between their procedures that could explain their different results. This led to the development of new theories. What aspect of scientific evaluation is depicted in this series of events?
    a. peer-reviewed publication
    b. experimenter bias
    c. meta-analysis
    d. replication

    ANSWER: d

146. Dr. Aiken was interested in whether a particular effect was reliable, so he took a number of published studies and conducted special statistical procedures in order to compare the results across all of those studies. He found that the effect was very reliable across a variety of samples and situations. What type of procedure did Dr. Arnold conduct?
    a. peer-review
    b. random sampling
    c. meta-analysis
    d. replication

    ANSWER: c

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147. Which of the following is present in most research studies but absent in meta-analysis?
    a. statistical analysis
    b. direct contact with participants
    c. a sample
    d. data

    ANSWER: b

148. In research terms, what is a sample?
    a. a subset of the population who actually participate in a research study
    b. a group of people to whom the conclusion of the study will apply
    c. a group that contains fewer than 50 people or animals
    d. all the volunteers who express an interest in the study

    ANSWER: a

149. To determine whether students would like more courses scheduled in the late-afternoon and evening hours, the Student Services department sends questionnaires to 50 students selected at random from the 5,000 who are registered at the campus. In this instance, what do we call the 5,000 students who are registered at the campus?
    a. an independent variable
    b. the biased sample
    c. the population
    d. the representative sample

    ANSWER: c

150. To discover whether residents of a city are in favour of building a new sports stadium, the team's owner randomly selected and interviewed 500 of the city's 500,000 residents. In this instance, what do we call the 500 people whom the owner interviewed?
    a. the representative sample
    b. the biased sample
    c. the population
    d. the dependent variable

    ANSWER: a

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151. If a researcher is particularly concerned about making sure that her results will generalize to the population as a whole, which of the following must she do?
    a. ensure that all the variables have been operationally defined
    b. conduct a meta-analysis
    c. use a double-blind procedure
    d. draw a representative sample from the population of interest

    ANSWER: d

152. A researcher who is conducting a survey about the concerns of average Canadians recruits participants through ads in a Toronto newspaper. What type of sample has the researcher created?
    a. a random sample
    b. a biased sample
    c. a representative sample
    d. a binary sample

    ANSWER: b

153. How should a researcher select subjects for a study in order to generate results that are generalizable?
    a. Subjects should all be chosen from the same geographical area and socio-economic class.
    b. Subjects should be allowed to choose which group they would like to be in.
    c. Subjects should be from WEIRD societies.
    d. Subjects should be carefully chosen so that they are a representative sample of the population.

    ANSWER: d

154. Why is sampling bias a problem?
    a. It makes it impossible to use inferential statistics.
    b. It limits the generalizability of the findings.
    c. It makes the effect of the independent variable appear to be bigger than it really is.
    d. It makes it difficult to avoid a confounding of variables.

    ANSWER: b

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Chapter 2 - The Research Enterprise in Psychology

155. Dr. Stills is interested in people's reactions to a controversial jury verdict. Dr. Stills calls people at their home between the hours of 1:00 p.m. and 3:30 p.m. on a Tuesday afternoon. In this example, what type of sample has Dr. Stills most likely selected?
    a. a biased sample
    b. a redundant sample
    c. a bimodal sample
    d. a representative sample

    ANSWER: a

156. What are WEIRD societies?
    a. Groups that are considered to be minorities in North America
    b. Groups that tend to have non-conformist results in psychology studies
    c. Groups that are limited to a single race or ethnic group
    d. Groups that are typically overrepresented in psychology research

    ANSWER: d

157. What does the W stand for in WEIRD societies?
    a. Western
    b. White
    c. Well-educated
    d. Wealthy

    ANSWER: a

158. Tammy expects that she will be more likely to get a job offer if she wears red to her interviews. She wore red to each of her interviews and she got offered a job. Which of the following might have influenced Tammy's likelihood of being offered a job?
    a. placebo effect
    b. socially desirable responding
    c. halo effect
    d. experimenter bias

    ANSWER: a

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159. Dr. Limmex is trying to get government approval for a new drug to treat anxiety. Dr. Limmex claims that 14 percent of the people who took this new drug reported reduced anxiety; however, other researchers claim that 14 percent of patients who receive no treatment also report reductions in their anxiety levels. What could explain patient improvement in Dr. Limmex's study?
    a. improper assignment to groups
    b. non-representative sampling
    c. placebo effects
    d. self-report bias

    ANSWER: c

160. In an investigation of the effects of caffeine on concentration, half the participants were given colas that contained caffeine and half were given decaffeinated colas. In this study, what is decaffeinated cola?
    a. a random factor
    b. a confounding variable
    c. a dependent variable
    d. a placebo

    ANSWER: d

161. Dr. Voegeli is testing the effects of a new diet supplement on the endurance levels of several groups of athletes. One group receives 50 ml per day of the supplement. A second group receives 50 ml per day of a substance that has no active component, but looks and tastes just like the supplement. A third group receives nothing at all. In this case, what would we call the second group?
    a. the experimental group
    b. the comparison group
    c. the control group
    d. the placebo control group

    ANSWER: d

162. Darla has sent out a survey in which she is asking people to provide information about their attitudes on a number of sensitive subjects. Why might Darla expect responses to the survey to be somewhat distorted?
    a. because of sampling bias
    b. because of social desirability bias
    c. because of experimenter bias
    d. because of meta-analysis

    ANSWER: b

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163. How do subjects tend to answer questions about themselves when they are being influenced by the social desirability bias?
    a. in a socially approved manner
    b. in a socially rebellious manner
    c. by agreeing with nearly every statement
    d. by answering in a selfish manner

    ANSWER: a

164. Which of the following researchers is most likely to encounter social desirability bias?
    a. Ahmed, who documents case studies of musical geniuses
    b. Barry, who tests the effectiveness of new drugs
    c. Celine, who conducts surveys about parenting behaviours
    d. Diane, who does field research with endangered species

    ANSWER: c

165. Subjects' self-reports often indicate that they are healthier, happier, and less prejudiced than other types of evidence would suggest. What is the most likely explanation for these sorts of results?
    a. response set
    b. faulty memory
    c. social desirability bias
    d. experimenter bias

    ANSWER: c

166. Reinhold is filling out a psychological test, and as he reads each question he thinks about the way most other people would probably respond. When he answers, he selects the alternative that he thinks will present the most favourable impression. What tendency will Reinhold's answers reflect?
    a. placebo effect
    b. social desirability bias
    c. non-representative sampling
    d. negative response set

    ANSWER: b

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167. What do we call the tendency to respond to questions in a manner unrelated to the content of a question?
    a. placebo effect
    b. experimenter bias
    c. response set
    d. social desirability bias

    ANSWER: c

168. Konrad dislikes completing questionnaires, so each time he fills one out he always circles the same answer, such as "strongly agree" or "strongly disagree." What tendency does Konrad's behaviour reflect?
    a. placebo effect
    b. sampling bias
    c. social desirability
    d. response set

    ANSWER: d

169. Malinda is filling out a survey for a marketing agency in order to be eligible for a grand prize drawing. She doesn't actually read many of the questions, and simply answers "yes" to everything. What do we call this tendency?
    a. placebo effect
    b. interaction effect
    c. social desirability bias
    d. response set

    ANSWER: d

170. Sanja just bought a new car and is filling out a customer satisfaction survey. She loves her new car, and this leads her to fill out a glowing review. She indicated that she was "very satisfied" with the gas consumption of the car, even though it is much higher than her old car and she is paying more money than she would like. Which of the following terms reflects this positive review of a negative trait?
    a. social desirability bias
    b. response set
    c. experimenter bias
    d. halo effect

    ANSWER: d

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171. Kim received a very positive performance evaluation from her supervisor. She expected the review to be strong, because she had worked hard and knew that she had performed well. She was surprised, however, to see that she got an "excellent" rating for punctuality. She knows she has been late to work repeatedly, and her supervisor was aware of it. Which of the following best explains this inaccurate positive evaluation?
    a. halo effect
    b. social desirability bias
    c. experimenter bias
    d. placebo effect

    ANSWER: a

172. Which of the following is an example of experimenter bias?
    a. An experimenter explicitly instructs subjects to complete tasks in a particular order, rather than allowing them to choose the order of completion.
    b. An experimenter tries to make a favourable impression on the research subjects by being friendly and by providing a great deal of information.
    c. An experimenter conducts her study in a completely objective manner.
    d. An experimenter's belief in his own hypothesis affects either the subjects' behaviour or his observations of the subjects.

    ANSWER: d

173. What is the typical consequence of experimenter bias?
    a. The effects of the bias confirm the experimenter's expectations.
    b. The results of the study are not statistically significant.
    c. There is evidence of the placebo effect in the results of the experimental group.
    d. Experimenters often doubt their results when they first see them.

    ANSWER: a

174. Melvin and Leigh are interviewing students at their campus to determine if the students agree or disagree with a proposed policy change. Melvin believes the proposed policy change is a good idea, but Leigh believes the change will be bad for students. Nearly all the students who Melvin interviewed supported the policy change, but nearly all the students who Leigh interviewed disapproved of the change. Which of the following research problems could account for the different results?
    a. placebo effects
    b. response set
    c. confounded dependent variables
    d. experimenter bias

    ANSWER: d

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175. What method is often used to control for experimenter bias effects in research?
    a. non-representative sample
    b. placebo control group
    c. socially desirable procedure
    d. double-blind procedure

    ANSWER: d

176. In which of the following studies would it be impossible to implement a double-blind procedure?
    a. a study on the effects of a new pain medication
    b. a study that tests whether yoga influences mood
    c. an experiment that requires informed consent
    d. an experiment that has a completely representative sample

    ANSWER: a

177. Dr. Hugo designs an experiment to test the effectiveness of a new antidepressant. Half of the participants will receive the drug and half will receive a sugar pill, but neither the participants nor the researchers who administer the drug will know who is receiving the drug and who is receiving the sugar pill. What has Dr. Hugo designed?
    a. a double-blind research study
    b. an unethical research procedure
    c. a study that will minimize self-report bias
    d. an experimental study with two confounded variables

    ANSWER: a

178. Scarlett is a graduate student who is observing children playing together after watching a film. She knows that some children saw a film that contained graphic scenes of violence and some children saw a non-violent film, but she doesn't know which film each child she is observing watched. What would we call this type of procedure?
    a. correlational
    b. blind
    c. confounded
    d. double-blind

    ANSWER: b

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179. Dr. Pine is testing a new drug and has a placebo-control group. When he provides the drugs to patients and when he interviews them about side effects, he never knows whether the patient got the drug or the placebo. What is the most likely reason that Dr. Pine chose this type of research design?
    a. It reduces the impact of experimenter bias.
    b. It prevents the halo effect.
    c. It minimizes the possibility of self-report bias.
    d. It ensures that the sample is not biased.

    ANSWER: a

180. Which of the following statements is most accurate?
    a. In recent years, there has been a steady increase in the use of deception in psychological research.
    b. Although deception has been used in the past, it has recently been banned by the American Psychological Association and the Canadian Psychological Association.
    c. Deception has been fairly common in psychological research since the 1960s.
    d. Deception has never been used in psychological research.

    ANSWER: c

181. Which of the following is NOT one of the arguments that critics have used against the use of deception in psychological research?
    a. Lying is inherently immoral.
    b. Subjects may feel foolish when the true purpose of the study is revealed.
    c. The results of studies that use deception are inaccurate and untrustworthy.
    d. The subjects' ability to trust others may be undermined.

    ANSWER: c

182. Zigfried Rosenblat, Jr. took part in a study on sexual deviance last year. He was somewhat dismayed when he read an article in a weekly journal discussing sexual deviance in which one patient was referred to as ZRJ. Although the article claimed all names had been disguised to protect personal identities, Zigfried is convinced he is the individual described in the article. In this case, which ethical principle did the researchers likely violate?
    a. responsible caring
    b. responsibility to society
    c. respect for the dignity of persons
    d. integrity in relationships

    ANSWER: c

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183. Which of the following is generally accepted regarding the use of animals in research under Canadian ethical guidelines?
    a. Animals can be used in research laboratories, but only in observational studies, not experimental studies.
    b. Animals can be used for any form of research, regardless of the dangers associated with that research.
    c. Animals are used in research only when there is a strong expectation that the results will benefit both humans and animals.
    d. Animals can be used in research but can be harmed only when there is clear evidence that the results will lead to treatments or cures for existing human or animal disorders.

    ANSWER: c

184. Why must Canadian researchers adhere to ethical guidelines that are set by the Tri-Council?
    a. to be promoted within their university
    b. to have their research funded by the national granting agencies
    c. to have their research approved by independent provincial ethical boards
    d. to avoid criminal prosecution

    ANSWER: b

185. Which of your text's unifying themes is illustrated by the fact that researchers focus their attention on findings that are unlikely to have occurred by chance?
    a. Psychology is theoretically diverse.
    b. People's experience of the world is highly subjective.
    c. Behaviour is determined by multiple causes.
    d. Psychology is empirical.

    ANSWER: d

186. Psychology researchers publish the results of their studies so that other experts can evaluate and scrutinize those results. Which of your text's unifying themes is illustrated by this practice?
    a. People's experience of the world is highly subjective.
    b. Behaviour is determined by multiple causes.
    c. Psychology is empirical.
    d. Psychology is theoretically diverse.

    ANSWER: c

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Chapter 2 - The Research Enterprise in Psychology

187. Which of your text's unifying themes is illustrated by the fact that subjects sometimes report beneficial effects from a placebo treatment?
    a. Behaviour is shaped by our cultural heritage.
    b. Heredity and environment jointly influence behaviour.
    c. Psychology is empirical.
    d. People's experience of the world is highly subjective.

    ANSWER: d

188. Which of your text's unifying themes is illustrated by the fact that research results can be affected by experimenter bias?
    a. Psychology is theoretically diverse.
    b. People's experience of the world is highly subjective.
    c. Behaviour is shaped by our cultural heritage.
    d. Behaviour is determined by multiple causes.

    ANSWER: b

189. Who is the target audience for articles published in technical and scholarly journals?
    a. professionals in that field
    b. the general public
    c. anyone with an interest in the topic
    d. students majoring in that field

    ANSWER: a

190. Although there are several types of journal articles, which type is most common within psychology?
    a. manuscripts that propose new theories that are intended to stimulate research
    b. reports that describe original, empirical studies
    c. articles that describe and evaluate new treatment methods for psychological disorders
    d. papers that summarize and reconcile the findings from a large number of studies on a specific issue

    ANSWER: b

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191. What is the major difference between review articles and articles that report original empirical studies?
    a. Review articles summarize findings from a large number of studies on a specific topic, whereas most empirical articles are more limited in scope.
    b. Review articles are published in books while empirical articles are published in journals.
    c. Review articles are used to evaluate new techniques, whereas empirical articles report new research results.
    d. Review articles are reviewed by experts before they are published in the journal, unlike most empirical articles.

    ANSWER: a

192. Where would you look to find a database of research literature in psychology, and brief summaries of individual research studies?
    a. Canadian Psychological Association home page
    b. *Psychological Review*
    c. *Psychology Today*
    d. *PsycINFO*

    ANSWER: d

193. What is the benefit of reading an abstract?
    a. It can be quickly scanned to determine whether the rest of the article is relevant for your purposes.
    b. It shows a detailed description of the research methods that the researchers used.
    c. It provides you with all of the results and detailed statistics, so you can determine whether the results are significant.
    d. It summarizes all the research that led the researchers to their current hypothesis.

    ANSWER: a

194. In which section of a journal article would you look for the hypotheses for a research study?
    a. results
    b. methodology
    c. references
    d. introduction

    ANSWER: d

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Chapter 2 - The Research Enterprise in Psychology

195. Where in a journal article would you look for the data obtained in a research study, along with the statistical analyses?
    a. discussion
    b. results
    c. method
    d. abstract

    ANSWER: b

196. What is provided in the reference list at the end of a research article?
    a. abstracts for all the previous research studies by the same authors
    b. list of related articles on the same topic by a variety of authors
    c. bibliographic information for any studies referred to in the article
    d. the author's phone number, address, and website

    ANSWER: c

197. When we say that persons are using anecdotal evidence to support their claims, what do we mean?
    a. The evidence is not true.
    b. The evidence is based on social desirability bias.
    c. The evidence was collected from a variety of sources.
    d. The evidence is based on personal experiences.

    ANSWER: d

198. What can we conclude from studies that have investigated the influence of anecdotal information?
    a. People are not influenced by anecdotal information, and tend to view it as non-representative and biased.
    b. People tend to be influenced by anecdotal information, even when they are forewarned that the information is not representative.
    c. People are influenced by anecdotal evidence only when they have not been forewarned that it may be misleading.
    d. People are influenced by anecdotal evidence only when it is provided by someone they know and trust.

    ANSWER: b

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Chapter 2 - The Research Enterprise in Psychology

199. Annabel wants a new phone. She has narrowed her choice down to two models. Alfred tells Annabel, "*Consumer Reports* did extensive testing and rated the X5 as the highest overall. The same article indicated that the uPhone is unreliable." Francine tells Annabel, "My uncle had the X5 and had problems with it. He switched to the uPhone and loves it." Which phone is Annabel likely to buy, based on results reported in the Critical Thinking Application?

a. The uPhone, because she will be more persuaded by the anecdotal evidence.

b. The X5, because she will be more persuaded by objective evidence.

c. Neither phone, because she would prefer to do her own research rather than rely on subjective opinions.

d. Neither phone, because the two reports her friends provided conflict with each other.

ANSWER: a

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Chapter 2 - The Research Enterprise in Psychology

Dr. Amalie

Dr. Amalie is a social psychologist who is interested in the effects of group size on efficiency and on the satisfaction of individual group members. In a study conducted by Dr. Amalie's research team, three different group sizes were used. Large groups had 20 people, medium groups had ten people, and small groups had four people. There were ten sessions run with each type of group, and each group contained different individuals, so the total number of groups was 30 and the total number of participants was 340. All participants were students at the school where Dr. Amalie works. The groups were told that they needed to come to agreement about which movie to select for an upcoming student movie night. The time that it took each group to come to a decision was recorded. Afterward, each subject was asked to rate his or her satisfaction with the group's decision (on a scale from 1 to 10, where 10 is totally satisfied).

The results were as follows:

Mean time required to come to an agreement (all differences are statistically significant):

Large groups: 20.7 minutes
Medium groups: 16.4 minutes
Small groups: 10.3 minutes

Mean satisfaction rating for individuals (all differences are statistically significant):

In large groups: 4.6
In medium groups: 7.5
In small groups: 8.8

200. In this study, what is the operational definition of efficiency?
    a. difference between speed and satisfaction
    b. size of the group
    c. satisfaction ratings
    d. speed of decision

    ANSWER: d

201. Which type of study did Dr. Amalie's research team conduct?
    a. experiment
    b. double-blind procedure
    c. case study
    d. naturalistic observation

    ANSWER: a

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202. Which of the following is a measure of central tendency from this study?
    a. The satisfaction rating for large groups is 4.6.
    b. The difference in decision time between small groups and large groups is 10.4 minutes.
    c. There was a total of 340 participants in the study.
    d. The range of potential satisfaction scores is from 1 to 10.

    ANSWER: a

203. What conclusion can you draw from the results of this study?
    a. Smaller groups are more likely to be influenced by the opinion of one individual.
    b. Group size is confounded with satisfaction ratings.
    c. Medium-sized groups have only a moderate amount of disagreement.
    d. Larger groups take longer to come to a decision.

    ANSWER: d

204. What is the independent variable in this study?
    a. satisfaction of individual group members
    b. efficiency, as measured by speed of decision making
    c. group size
    d. comparing multiple groups

    ANSWER: c

205. How many dependent variables are used in this study?
    a. 1
    b. 2
    c. 3
    d. 10

    ANSWER: b

206. There appears to be a correlation between efficiency and satisfaction, such that the less time required to make a decision, the greater the satisfaction of the group members. Which of the following correlation coefficients would reflect this relationship?
    a. +0.85
    b. +0.05
    c. 0.00
    d. –0.79

    ANSWER: d

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Chapter 2 - The Research Enterprise in Psychology

207. Which of the following is important to the scientific method because the scientific method is intolerant of error?
    a. naturalistic observation
    b. placebo effects
    c. replication
    d. hypotheses

    ANSWER: c

208. Which method do researchers use precisely because our experience of the world is highly subjective?
    a. psychoanalytic methods
    b. independent variables
    c. double-blind procedure
    d. case studies

    ANSWER: c

209. Which of the following sets of concepts is NOT a closely related set?
    a. correlation, sample, journal
    b. method, results, discussion
    c. experiment, independent variable, control group
    d. mean, median, mode

    ANSWER: a

210. Imagine that a group of researchers designed a study to test the effectiveness of subliminal-message weight-loss tapes. Half the participants receive real tapes, and half receive similar tapes with the subliminal messages removed. The experimenter keeps track of which participant is in which group. All the participants are told that their tapes contain subliminal messages. What type of study is this?
    a. anecdotal research
    b. case study
    c. double-blind procedure
    d. single-blind study

    ANSWER: d

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211. Imagine that a group of researchers conducted a study designed to test the effectiveness of subliminal-message weight-loss tapes. Suppose the researchers found that everyone lost weight during the study, even those who were given tapes without any subliminal messages. What could we conclude from the results?
    a. The independent and dependent variables in the study are negatively correlated.
    b. There is evidence that the study contained confounding variables.
    c. There is evidence of a placebo effect.
    d. Subliminal tapes are effective in promoting weight loss.

    ANSWER: c

212. Dr. Klassen is conducting a study on attitudes about drug use. She wants to administer a survey. Which of the following groups of issues should she pay most attention to when she is designing her study?
    a. random sampling, use of a control group, inferential statistics
    b. representative sampling, self-report bias, response set
    c. representative sampling, experimenter bias, ethics regarding deception
    d. random assignment, experimenter bias, placebo effects

    ANSWER: b

213. Dr. Friesen wants to investigate whether store clerks behave in a discriminatory manner toward teenagers. He is trying to decide between using naturalistic observation and using a questionnaire. What would be the best choice?
    a. Questionnaires, because clerks would become angry and refuse to participate if they knew you were spying on them.
    b. Naturalistic observation, because you can record behaviour and avoid self-report bias.
    c. Questionnaires, because you'll be able to make cause-and-effect statements.
    d. Naturalistic observation, because clerks would likely refuse to respond to questionnaires.

    ANSWER: b

214. Design a simple experiment to investigate the effects of television violence on children's aggressive behaviour, being sure to identify the independent and dependent variables, and the experimental and control groups.

    ANSWER: There are numerous possible experimental designs. Make sure there is an explicit, testable hypothesis; that "television violence" and "aggressive behaviour" are operationally defined; that children are randomly assigned to groups; and that the control group is exposed to nonviolent television rather than to no television at all.

215. Design a simple descriptive/correlational study to investigate the relationship between television violence and children's aggressive behaviour.

    ANSWER: Again, there are numerous possibilities. Make certain that both variables are operationally defined; that a specific descriptive/correlational method (such as naturalistic observation or survey) is selected; and that causation is neither stated nor implied.

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216. What are the relative weaknesses and strengths of descriptive/correlational research as opposed to experimental research? Under what conditions would a psychologist choose one method as opposed to the other?

ANSWER: Experimental research is the more powerful of the two methods, in that it allows precise control over the independent variable and therefore yields cause-and-effect conclusions. On the other hand, experiments may be somewhat artificial and often cannot be done for ethical reasons. Descriptive/correlational studies are conducted in the subjects' natural environment, they are easier and faster to do than experiments, and they can be done ethically in many circumstances in which experiments cannot. However, the researcher has little control over extraneous variables, and so cause-and-effect conclusions cannot be drawn. The choice between the two methods is a function of practical and ethical considerations.

217. What is the difference between a positive correlation and a negative correlation? List some specific variables that you predict would be positively correlated, and variables that would be negatively correlated, with alcohol consumption by college students.

ANSWER: Positive correlation: As scores on variable X increase, scores on variable Y tend to increase, too. Examples are alcohol consumption and body weight, and alcohol consumption and number of missed classes.

Negative correlation: As scores on variable X increase, scores on variable Y tend to decrease. Examples are alcohol consumption and coordination, and alcohol consumption and grade point average.

218. Describe the problems in research associated with placebo effects and experimenter bias, and explain how you would attempt to prevent these problems within a research design.

ANSWER: Placebo effects: Participants may expect an effect of an experimental treatment, and so will feel an effect or show a change in behaviour. This change is due to expectancy, not to manipulation of the independent variable. You would deal with this problem by having a placebo control group (a group that gets an inert version of the independent variable) so that you can compare the change in the experimental group to the change in a group that received a placebo.

Experimenter bias: Researchers may unwittingly lead participants to respond in a particular way, or may interpret their data in a particular way that confirms their pre-existing hypotheses. In order to avoid this effect, it is recommended that the studies be designed as single-blind (where the experimenter doesn't know which condition the participants are in) or double-blind (where neither the experimenters nor the participants know who is in which group). [NOTE: A double-blind study may also control for some aspects of placebo effects, so long as both active and inert versions of the independent variable are given.]

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Chapter 3 - The Biological Bases of Behaviour

1. Which cells in the nervous system do most of the work of receiving, integrating, and transmitting information?
   a. neurons
   b. glial cells
   c. axons
   d. dendrites

   ANSWER: a

2. Which of the following is the most accurate description of the structure and function of all neurons in your central nervous system?
   a. All neurons contain a cell body and an axon, and may have other structures.
   b. All neurons receive information via one or more dendrites and send information via one or more axons.
   c. All neurons synapse onto another neuron in order to transmit an electrical signal.
   d. All neurons receive and send information.

   ANSWER: d

3. Which of the following is NOT one of the main functions of neurons?
   a. integrating information
   b. generating information
   c. transmitting information
   d. receiving information

   ANSWER: b

4. What are three basic components of most neurons?
   a. vesicles, terminal buttons, synapses
   b. myelin, nodes, axon terminals
   c. cell body, axon, dendrites
   d. hindbrain, midbrain, forebrain

   ANSWER: c

5. Which neuronal structures are analogous to branches on a tree?
   a. dendrites
   b. axons
   c. nuclei
   d. cell bodies

   ANSWER: a

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Chapter 3 - The Biological Bases of Behaviour

6. On a typical neuron, which structure receives neurochemical information, and which structure sends neurochemical information to other neurons?
   a. Dendrites receive; axons send.
   b. Axons send; synapses receive.
   c. Dendrites receive; synapses send.
   d. Axons receive; dendrites send.

   ANSWER: a

7. In computers, the keyboard is the component of the computer that receives information. What would the keyboard be equivalent to, in comparing a computer to a neuron?
   a. axon
   b. soma
   c. dendrite
   d. terminal button

   ANSWER: c

8. Emma has a disorder that includes degeneration of myelin sheaths in her nervous system. Which of the following disorders does Emma most likely have?
   a. Alzheimer's disease
   b. multiple sclerosis
   c. Broca's aphasia
   d. Parkinson's disease

   ANSWER: b

9. Which of the following is associated with the fastest neural impulses?
   a. unmyelinated dendrites
   b. myelinated axons
   c. shorter axons
   d. multiple dendrites

   ANSWER: b

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Chapter 3 - The Biological Bases of Behaviour

10. When you want to print something from a computer, a cable carries this signal from the computer to the printer. In comparing a computer and printer to two neurons, what is the neuronal equivalent to the cable?
    a. synapse
    b. soma
    c. terminal button
    d. axon

    ANSWER: d

11. When you are printing something from your computer, your cable must be securely connected to the printer or else the signal won't get through. If you compared a computer and printer to two neurons, what is the neuronal equivalent of the connection between the cable and the printer?
    a. synapse
    b. soma
    c. terminal button
    d. axon

    ANSWER: a

12. Which part of the neuron secretes neurotransmitters?
    a. neuromodulators
    b. dendrites
    c. myelin sheaths
    d. terminal buttons

    ANSWER: d

13. Which of the following is the correct sequence of structures through which information flows in a neuron?
    a. dendrites to axon to soma
    b. axon to glia to dendrites
    c. glia to dendrites to axon
    d. dendrites to soma to axon

    ANSWER: d

14. What are the cells that provide structural support and insulation for neurons?
    a. synapses
    b. sheaths
    c. glia
    d. soma

    ANSWER: c

15. What is the primary role of glial cells?
    a. They form the primary components of the spinal cord.
    b. They provide support for neurons.
    c. They release neurotransmitters.
    d. They release neuromodulators.

    ANSWER: b

16. What would happen if you were to lose all of your glial cells?
    a. There would be no change in functioning, because neurons are the cells that are important for transmission of information within the nervous system.
    b. One hemisphere could not send information to the other hemisphere.
    c. Your neurons would no longer have a normal chemical environment, and there would be problems with efficient neurotransmission.
    d. You would no longer be able to send neurotransmitters from one cell to another.

    ANSWER: c

17. Which of the following is a characteristic of both sodium and potassium ions?
    a. They carry a negative charge.
    b. They are concentrated inside the neuron's cell body.
    c. They carry a positive charge.
    d. They are capable of changing their potentials.

    ANSWER: c

18. What do we call the tiny electrical charge that exists when a neuron is neither receiving nor sending information?
    a. resting potential
    b. action potential
    c. post-synaptic potential
    d. inhibitory potential

    ANSWER: a

19. When a neuron is neither receiving nor sending, what is the approximate voltage of the electrical charge that exists between the inside and the outside of a neuron?
    a. –700 millivolts
    b. –70 millivolts
    c. +70 millivolts
    d. +700 millivolts

    ANSWER: b

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20. Bradley is deeply relaxed and many of his muscles are not moving at all. What does this suggest about many of Bradley's motor neurons?
    a. They have a voltage of +70 millivolts.
    b. They have a voltage of –70 millivolts.
    c. They are in a relative refractory period.
    d. They are in an absolute refractory period.

    ANSWER: b

21. When the sodium channels of a neuron open, allowing sodium ions to flow inside, which of the following is most likely to happen next?
    a. a resting potential
    b. an action potential
    c. a refractory period
    d. reuptake

    ANSWER: d

22. What is an action potential?
    a. an electrical signal that travels along the axon of a neuron
    b. the small gap that exists between adjacent neurons
    c. the tiny electrical charge that exists when a neuron is neither receiving nor sending information
    d. the release of neurotransmitters

    ANSWER: a

23. Tracey became dehydrated during a recent illness, and the levels of sodium in her body were significantly reduced. What would we expect to occur if enough sodium was lost?
    a. Her nervous system would become highly activated, and action potentials would be generated continuously.
    b. More neurotransmitters would be produced in her terminal buttons.
    c. Fewer action potentials would occur in her nervous system.
    d. Glial cells would start to degenerate and die.

    ANSWER: c

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24. A neuron just sent a neural impulse. It will be one to two milliseconds before another neural impulse can be generated. What do we call this brief time increment, when another neural impulse cannot occur?
    a. resting potential
    b. absolute refractory period
    c. postsynaptic discharge
    d. all-or-none period

    ANSWER: b

25. What is the term for the minimum length of time between action potentials?
    a. relative threshold period
    b. transduction interval
    c. absolute refractory period
    d. synaptic interval

    ANSWER: c

26. Which of the following is known about action potentials? **got right but guessed ****
    a. They travel more slowly if the incoming stimulation is less intense.
    b. They are stronger when the incoming stimulation is more intense.
    c. They are generated in an all-or-none fashion.
    d. They are seldom strong enough to reach the terminal buttons.

    ANSWER: c

27. What is the typical speed of an action potential?
    a. at least 600 kilometres/hour
    b. up to 300 kilometres/hour
    c. approximately the speed of light (300,000 kilometres/second)
    d. approximately the speed of sound (1236 kilometres/hour)

    ANSWER: b

28. Sara is holding Scott's hand during a scary movie. Suddenly she squeezes his hand very hard. When she does this, what will the nerves in Scott's hand do?
    a. release more GABA
    b. send larger action potentials to his central nervous system
    c. enter an absolute refractory period
    d. start to fire at a faster rate

    ANSWER: d

29. Fiona puts her hands into a bucket of lukewarm water; Luke puts his hands into a bucket of ice-cold water. What should we predict about each of their action potentials?
    a. Only Fiona will experience enough stimulation to trigger an action potential.
    b. Luke will have inhibitory action potentials.
    c. Their action potentials will differ in rate, due to differences in the intensity of the stimuli.
    d. Their action potentials will differ in size, due to differences in the intensity of the stimuli.

    ANSWER: c

30. Peggy smells a very strong odour; Harry smells an odour that is barely detectable. Based on what is known about neural transmission, what should we predict about each of their action potentials?
    a. They will be the same size but at different rates.
    b. Peggy's will be excitatory, and Harry's will be inhibitory.
    c. They will be weaker in Harry's system because the stimulus is less intense.
    d. They will be distinguished by the amount of inhibition they exert on synapses.

    ANSWER: a

31. What do we call the space between a terminal button and a dendrite?
    a. the transmission gap
    b. the midsynaptic potential range
    c. the synaptic cleft
    d. the neuromodulator

    ANSWER: c

32. Where are neurotransmitters stored?
    a. in the dendrites
    b. in the mitochondria
    c. in the axon
    d. in the synaptic vesicles

    ANSWER: d

33. What do synaptic vesicles do?
    a. They fuse with the postsynaptic cell.
    b. They store neurotransmitters.
    c. They block receptors.
    d. They manufacture myelin.

    ANSWER: b

34. What happens when a neurotransmitter is released from a presynaptic neuron, but it does not fit into a suitable receptor channel on the postsynaptic neuron?
    a. The firing potential of the postsynaptic neuron will not be affected.
    b. An inhibitory postsynaptic potential will be generated.
    c. A graded potential will be generated.
    d. The presynaptic neuron will be inhibited.

    ANSWER: a

35. What is a good analogy for the way in which a neurotransmitter binds to receptor sites?
    a. the lowering of a drawbridge
    b. a key fitting in a lock
    c. the pulling of a gun trigger
    d. the opening and closing of a window

    ANSWER: b

36. What type of electric potential increases the likelihood that the postsynaptic neuron will fire?
    a. all-or-none potential
    b. excitatory postsynaptic potential
    c. inhibitory postsynaptic potential
    d. a resting potential

    ANSWER: b

37. The voltage at a receptor site has just changed from –70 millivolts to –75 millivolts. What caused the change?
    a. excitatory postsynaptic potential
    b. influx of potassium ions
    c. influx of sodium ions
    d. inhibitory postsynaptic potential

    ANSWER: d

38. The voltage at a receptor site has just changed from –70 millivolts to –67 millivolts. What will this lead to?
    a. an absolute refractory period
    b. increased likelihood of an action potential
    c. decreased likelihood of an action potential
    d. a relative refractory period

    ANSWER: b

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39. What do we call the process of absorption of neurotransmitters into the presynaptic neuron?
    a. reuptake
    b. neurotransmission
    c. graded potential
    d. inhibition

    ANSWER: a

40. Which of the following is the correct sequence of steps through which neurotransmitters progress during synaptic transmission?
    a. binding, synthesis, release, inactivation, reuptake
    b. synthesis, release, binding, inactivation, reuptake
    c. synthesis, binding, release, reuptake, inactivation
    d. release, synthesis, binding, reuptake, inactivation

    ANSWER: b

41. If a brain has several synapses that are not particularly active, those synapses may be eliminated. What is this process called?
    a. synaptic pruning
    b. inhibition
    c. natural selection
    d. long-term potentiation

    ANSWER: a

42. At what age do humans tend to have the largest number of synapses?
    a. at birth
    b. at 1 year
    c. at puberty
    d. after physical growth has ended in early adulthood

    ANSWER: b

43. According to the Hebbian Learning Rule, if an axon of Cell A is near enough to repeatedly stimulate Cell B (causing it to fire often), then what will happen to Cell B?
    a. Cell B will eventually stop responding to Cell A.
    b. Cell B will merge with Cell A.
    c. Cell B will be pruned because it is redundant with Cell A.
    d. Cell B will become more likely to fire in response to signals from Cell A.

    ANSWER: d

44. Which of the following neurotransmitters is primarily involved in the activation of motor neurons controlling skeletal muscles?
    a. GABA
    b. acetylcholine
    c. serotonin
    d. norepinephrine

    ANSWER: b

45. Jeremy is sitting quietly when the voluntary muscles in his left leg begin to twitch. Which neurotransmitter is likely being released?
    a. serotonin
    b. norepinephrine
    c. acetylcholine
    d. GABA

    ANSWER: c

46. When your text states that nicotine functions as an acetylcholine agonist, what does that mean?
    a. It interacts with acetylcholine to produce a novel effect.
    b. It occupies acetylcholine receptor sites, thus blocking the action of the neurotransmitter.
    c. It stimulates some acetylcholine synapses.
    d. It inhibits some acetylcholine release.

    ANSWER: c

47. What does an agonist do?
    a. It extends the absolute refractory period of neural transmission.
    b. It blocks the action of neurotransmitters.
    c. It mimics the action of a neurotransmitter.
    d. It prevents reuptake of neurotransmitters.

    ANSWER: c

48. Curare blocks the action of acetylcholine by occupying its receptor sites. In this context, what is curare?
    a. a neurotransmitter
    b. an agonist
    c. a neuromodulator
    d. an antagonist

    ANSWER: d

49. Dr. Jacoby has just discovered a new drug named Z2W that is an antagonist to acetylcholine. What are some likely side effects of this new drug?
    a. hallucinations and disrupted sleep patterns
    b. general stimulation within the body and an increase in heart rate
    c. sleepiness and loss of interest in activities
    d. motor and memory problems

    ANSWER: d

50. Dr. Ferracane has just discovered a new drug named GL8 that produces side effects such as paralysis and memory loss. Based on this information, how might this drug act on the nervous system?
    a. as an agonist for GABA
    b. as an antagonist for GABA
    c. as an antagonist for acetylcholine
    d. as an agonist for acetylcholine

    ANSWER: c

51. What seems to be a primary cause of Parkinson's disease?
    a. degeneration of neurons that use dopamine as a neurotransmitter
    b. degeneration of myelin sheaths
    c. antagonistic effects on acetylcholine receptors
    d. damage to glial cells

    ANSWER: a

52. Garrett has a chronic disease that is slowly destroying the cells that produce serotonin in his brain. Which of the following will likely happen to Garrett as his disease progresses?
    a. His memory will gradually worsen.
    b. He will start to show signs of Parkinson's disease.
    c. His sleep and mood will be disrupted.
    d. He will begin to experience symptoms of schizophrenia.

    ANSWER: c

53. Which of the following disorders is associated with reduced activity at norepinephrine and serotonin receptors?
    a. depression
    b. schizophrenia
    c. Parkinson's disease
    d. multiple sclerosis

    ANSWER: a

54. Julia is currently in the midst of a major depression. Which of the following patterns of neurotransmitter activity is most likely to be associated with her symptoms?
    a. reduced levels of GABA
    b. increased activity at serotonin synapses
    c. increased levels of dopamine
    d. reduced activity at norepinephrine synapses

    ANSWER: d

55. Stuart abuses a drug that is a dopamine agonist. Which of the following is Stuart most likely to experience when he is high?
    a. deep relaxation
    b. hallucinations
    c. temporary paralysis
    d. excessive anxiety

    ANSWER: b

56. Caitlin has taken a drug that has reduced the levels of GABA in her nervous system. What side effect is Caitlin likely to experience?
    a. motor tics and other involuntary motor movements
    b. increased levels of anxiety
    c. depression
    d. hallucinations

    ANSWER: b

57. Dr. Athorp has just discovered a new drug named P3X that is an agonist for GABA. What effects will this drug likely have?
    a. hallucinations and disrupted sleep patterns
    b. general stimulation within the body and an increase in heart rate
    c. a reduction in pain and a sense of euphoria
    d. anxiety reduction and general relaxation

    ANSWER: d

58. Which of the following neurotransmitters always has inhibitory effects?
    a. GABA
    b. glutamate
    c. acetylcholine
    d. norepinephrine

    ANSWER: a

59. Which of the following neurotransmitters has effects on learning and memory, and on long-term potentiation?
    a. GABA
    b. glutamate
    c. acetylcholine
    d. norepinephrine

    ANSWER: b

60. Opiate drugs bind onto the same receptor sites as the body's own endorphins. What effect, then, do opiate drugs have?
    a. They increase anxiety and agitation.
    b. They inhibit visual sensations.
    c. They produce insomnia.
    d. They relieve pain.

    ANSWER: d

61. Which of the following neurotransmitters is most similar to the drug heroin?
    a. acetylcholine
    b. dopamine
    c. endorphins
    d. serotonin

    ANSWER: c

62. If you were making a new drug to treat pain, which type of neurotransmitter would you attempt to mimic?
    a. dopamine
    b. monoamines
    c. acetylcholine
    d. endorphins

    ANSWER: d

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63. What are the two most basic divisions of the nervous system?
    a. somatic nervous system and autonomic nervous system
    b. brain and spinal cord
    c. sympathetic division and parasympathetic division
    d. central nervous system and peripheral nervous system

    ANSWER: d

64. In which part of the nervous system are the nerves in your hands and feet found?
    a. peripheral
    b. vascular
    c. parasympathetic
    d. skeletal

    ANSWER: a

65. Which major division of the nervous system is comprised of the somatic nervous system and the autonomic nervous system?
    a. skeletal
    b. central
    c. afferent
    d. peripheral

    ANSWER: d

66. What system allows you both to notice a buzzing near your ear and to swat the mosquito away?
    a. autonomic nervous system
    b. somatic nervous system
    c. limbic system
    d. endocrine system

    ANSWER: b

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67. What is the distinction between afferent and efferent nerves?
    a. Afferent nerves take information to the central nervous system, while efferent nerves take information out from the central nervous system.
    b. Afferent nerves are motor neurons, while efferent nerves are sensory neurons.
    c. Afferent nerves are in the peripheral nervous system, while efferent nerves are in the central nervous system.
    d. Afferent nerves take information to the muscles, while efferent nerves take information to the central nervous system.

    ANSWER: a

68. Which division of the nervous system is necessary if you need to intentionally stand up or scratch your nose?
    a. autonomic
    b. parasympathetic
    c. sympathetic
    d. somatic

    ANSWER: d

69. Through which type of nerves does the brain send messages to the skeletal muscles in the legs when you are walking?
    a. central
    b. afferent
    c. efferent
    d. sensory

    ANSWER: c

70. Which part of the nervous system controls digestion and the flow of blood?
    a. somatic
    b. motor
    c. autonomic
    d. central

    ANSWER: c

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71. Which part of the nervous system diverts energy and resources in your body so that you can deal with emergency situations?
    a. central
    b. sympathetic
    c. parasympathetic
    d. somatic

    ANSWER: b

72. During what type of situations is the sympathetic nervous system in primary control?
    a. stress
    b. sexual
    c. calm
    d. fatigue

    ANSWER: a

73. Zayed was walking down a dark street when he heard a car backfire. His heart started to race, and he began to perspire in response to this sudden, startling noise. Which division of the nervous system is responsible for his reactions?
    a. sympathetic nervous system
    b. parasympathetic nervous system
    c. central nervous system
    d. somatic nervous system

    ANSWER: a

74. Karlette took some new medication for her hay fever. The medication made her heart race, and she became agitated and jittery. Which division of the nervous system has been activated by the medication?
    a. peripheral
    b. parasympathetic
    c. somatic
    d. sympathetic

    ANSWER: d

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75. Which division of your nervous system handles conservation of body resources, including blood pressure reduction and the promotion of digestion?
    a. central
    b. somatic
    c. parasympathetic
    d. sympathetic

    ANSWER: c

76. Which division of the nervous system is most likely to be in control of bodily processes during periods of rest and recovery for the body?
    a. parasympathetic
    b. somatic
    c. peripheral
    d. sympathetic

    ANSWER: a

77. Robyn has just eaten a full meal and is now relaxing. Which specific division of her nervous system is in primary control at this time?
    a. sympathetic nervous system
    b. parasympathetic nervous system
    c. somatic nervous system
    d. peripheral nervous system

    ANSWER: b

78. Brenda was startled when a large shadow unexpectedly passed across her living room window. When she realized that it was just a cloud passing in front of the full moon, her racing heart began to slow, and her blood pressure started to return to normal. What division of the nervous system controlled the reactions as Brenda began to relax?
    a. somatic nervous system
    b. peripheral nervous system
    c. sympathetic nervous system
    d. parasympathetic nervous system

    ANSWER: d

79. Johann took some medication for his flu symptoms. Later, Johann began to feel a little faint because the medication caused his heart to beat more slowly and his blood pressure to fall. What system was likely activated by the medication?
    a. parasympathetic nervous system
    b. sympathetic nervous system
    c. somatic nervous system
    d. central nervous system

    ANSWER: a

80. What does the central nervous system consist of?
    a. the sympathetic and parasympathetic nervous systems
    b. the somatic and autonomic nervous systems
    c. the body's sensory and motor neurons
    d. the brain and the spinal cord

    ANSWER: d

81. What are the protective membranes that protect the brain and spinal cord?
    a. meninges
    b. myelin sheaths
    c. ventricles
    d. glia

    ANSWER: a

82. Which of the following protects the brain as a whole by providing an internal cushion?
    a. meninges
    b. ventricles filled with CSF
    c. myelin sheaths
    d. synaptic vesicles

    ANSWER: b

83. Which of the following is the most accurate representation of the relationship between the brain and spinal cord?
    a. The spinal cord communicates with the brain, but is separated by the meninges.
    b. The spinal cord receives commands from the brain through nerves and cerebrospinal fluid.
    c. The spinal cord and brain contribute independently to the central nervous system.
    d. The spinal cord is an extension of the brain.

    ANSWER: d

84. If brain damage is suspected, which of the following methods is most likely to be used to assess the damage?
    a. electroencephalograph (EEG)
    b. transcranial magnetic stimulation (TMS)
    c. electrocardiograph (ECG)
    d. electrical stimulation of the brain (ESB)

    ANSWER: a

85. To confirm a diagnosis of epilepsy, a neurologist needs to record the overall electrical activity in Hillary's brain. What would be the best way for the neurologist to obtain this information?
    a. magnetic resonance imaging (MRI)
    b. an electroencephalograph (EEG)
    c. transcranial magnetic stimulation (TMS)
    d. computerized tomography (CT) scan

    ANSWER: b

86. Standing outside a football stadium and judging the excitement of the game by the crowd's screams is analogous to "eavesdropping" on the brain using which of the following?
    a. electrical stimulation
    b. MRI scanning
    c. CT scanning
    d. an electroencephalograph

    ANSWER: d

87. Paul is wide awake and studying for an upcoming exam. While he is studying, his brain activity is being recorded using an electroencephalograph (EEG). Which type of waves is likely to dominate Paul's EEG readings?
    a. high-voltage, high-frequency brain waves
    b. low-voltage, high-frequency brain waves
    c. high-voltage, low-frequency brain waves
    d. low-voltage, low-frequency brain waves

    ANSWER: b

88. Imagine that you are looking at a printout from an electroencephalograph and you see a change from fairly short waves that are close together to waves that are tall and farther apart. What could you infer has happened to the person whose waves have been recorded?
    a. She fell asleep.
    b. She is having a seizure.
    c. She is studying.
    d. She is experiencing anxiety.

    ANSWER: a

89. Dr. Smith destroys a small piece of tissue in the forebrain of a rat in order to determine whether that area is important for maze-learning. What is this technique called?
    a. case study method
    b. tomography
    c. transcranial stimulation
    d. lesioning

    ANSWER: d

90. Which of the following research techniques is least likely to be used to study the human brain?
    a. electrical brain stimulation
    b. transcranial magnetic stimulation
    c. lesioning
    d. positron emission tomography

    ANSWER: c

91. Electrical stimulation of its lateral hypothalamus causes an animal to overeat and become obese. Therefore, what could we expect to be produced by lesioning the lateral hypothalamus?
    a. no effect on eating or body weight
    b. overeating and obesity
    c. undereating and weight loss
    d. alternating periods of overeating and undereating

    ANSWER: c

92. Taylor has to have brain surgery to remove a tumour from her temporal lobe. During the surgery, the surgeon plans to map out specific brain function in the areas adjacent to the tumour. What method is the surgeon is most likely to use to map the brain?
    a. electrical stimulation of the brain (ESB)
    b. positron emission tomography (PET) scanning
    c. stereotaxic lesioning
    d. computerized tomography (CT) scanning

    ANSWER: a

93. Which technique results in effects that are similar to that of lesioning?
    a. stereotaxic plotting (STP)
    b. transcranial magnetic stimulation (TMS)
    c. electrical stimulation of the brain (ESB)
    d. magnetic resonance imaging (MRI)

    ANSWER: b

94. Sigourney's doctors think she might have a tumour, and they would like to use a technique that will provide them with an accurate image of her brain structure. What technique are they most likely to use?
    a. electrical stimulation of the brain (ESB)
    b. positron emission tomography (PET) scan
    c. computerized tomography (CT) scan
    d. electroencephalograph (EEG) recording

    ANSWER: c

95. For which of the following techniques would the patient be required to consume radioactive chemicals?
    a. magnetic resonance imaging
    b. positron emission tomography
    c. electroencephalography
    d. computerized tomography

    ANSWER: b

96. Which of the following techniques is likely to be most useful for identifying the activity of a specific neurotransmitter in the brain?
    a. computerized tomography
    b. positron emission tomography
    c. electrographic tomography
    d. magnetic resonance imaging

    ANSWER: b

97. Ricardo just came back from seeing a neurologist. Ricardo tells you that he will be having a test in which images of his brain will be recorded after he drinks a radioactive sugar solution. What test will his neurologist be using?
    a. a computerized tomography (CT) scan
    b. a magnetic resonance imaging (MRI) scan
    c. a positron emission tomography (PET) scan
    d. transcranial magnetic stimulation (TMS)

    ANSWER: c

98. Milo's doctors believe he might have some specific brain damage, but before they make their final diagnosis, they want to study very high-resolution, three-dimensional images of Milo's brain structures. Which technique are the doctors most likely to use in this case?
    a. an electroencephalograph (EEG) recording
    b. a computerized tomography (CT) scan
    c. a positron emission tomography (PET) scan
    d. a magnetic resonance imaging (MRI) scan

    ANSWER: d

99. What is the key advantage to using fMRI rather than an MRI?
    a. the ability to assess brain activity
    b. reduced discomfort for patients
    c. better spatial resolution
    d. reduced costs

    ANSWER: a

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100. In the Featured Study that examined brain regions associated with memory, why would the researchers have used fMRI technology for their study?
    a. It would have allowed them to look at precise locations of activity during different types of cognitive tasks.
    b. It would have allowed them to have the best spatial resolution, compared to other types of imaging.
    c. It would have allowed participants to move freely during the tasks.
    d. It is the only type of imaging that has good temporal resolution for assessing changes in brain function.

    ANSWER: a

101. Based on evidence from the Featured Study on the neuroscience of time travel, which of the following brain areas would you expect to be active when you are imagining what you will do tomorrow, but not particularly active when you are remembering what you did yesterday?
    a. temporal cortex
    b. parietal regions
    c. medial left prefrontal cortex
    d. right hippocampus

    ANSWER: d

102. Which brain area would you stimulate if you wanted to alter alertness or wakefulness?
    a. pons
    b. cerebellum
    c. medulla
    d. thalamus

    ANSWER: a

103. Which brain structure controls unconscious but essential functions such as breathing and circulation?
    a. corpus callosum
    b. pons
    c. medulla
    d. cerebellum

    ANSWER: c

104. Ian has been in a coma since he was in a serious car accident. He is still on life support because he is unable to breathe on his own. Which area of Ian's brain is likely damaged?
    a. medulla
    b. hypothalamus
    c. pons
    d. cerebellum

    ANSWER: a

105. A victim who is shot in the head died instantly because the bullet entered a portion of the hindbrain that regulates breathing. Which portion would that be?
    a. cerebellum
    b. pons
    c. medulla
    d. thalamus

    ANSWER: c

106. Which of the following is a hindbrain structure involved with sleep and arousal?
    a. pons
    b. cerebellum
    c. thalamus
    d. hypothalamus

    ANSWER: a

107. What is the primary function of the cerebellum?
    a. coordinating body movement
    b. storing semantic memory
    c. processing visual information
    d. controlling blood pressure

    ANSWER: a

108. What is the most likely consequence of damage to the cerebellum?
    a. eating irregularities
    b. impairment of short-term memory
    c. difficulties in judging distance
    d. problems with coordination of movement

    ANSWER: d

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109. The drunk-driving suspect was unable to walk a straight line with her eyes closed because activity in one of her brain structures was depressed by alcohol. Given this symptom, which brain structure is impaired?
    a. corpus callosum
    b. hypothalamus
    c. medulla
    d. cerebellum

    ANSWER: d

110. Wanda fell down some stairs and hit her head. Prior to her accident she was an excellent flute player, but she now has difficulty coordinating the finger movements required in complex musical pieces. Which of the following brain areas was likely damaged in the fall?
    a. reticular formation
    b. cerebellum
    c. amygdala
    d. temporal lobe

    ANSWER: b

111. Gaspar was a world-class diver until he hit his head on the diving board during one of his dives. He now has difficulty coordinating the movements required for various tucks and rotations. Which of the following areas of Gaspar's brain is likely damaged?
    a. temporal lobes
    b. medulla
    c. cerebellum
    d. pons

    ANSWER: c

112. In which of the following areas of the brain is the dopamine system involved in Parkinson's disease located?
    a. forebrain
    b. midbrain
    c. brainstem
    d. hindbrain

    ANSWER: b

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113. Dr. Bashir has implanted electrodes in the brain of a rabbit. When currents of different frequencies are passed through the electrodes, the rabbit will fall into a deep sleep or suddenly awaken. Based on this information, where are the electrodes most likely implanted?
    a. cerebellum
    b. hippocampus
    c. medulla
    d. reticular formation

    ANSWER: d

114. Erin suffered a brain injury, and her neurologist has told her that there is damage to her reticular formation. Which of the following symptoms is Erin most likely to experience?
    a. difficulty with language perception
    b. disruption of her sleep and wake cycles
    c. inability to initiate movement
    d. inability to accurately locate objects in space

    ANSWER: b

115. Which brain structure appears to play an active role in integrating sensory information?
    a. hypothalamus
    b. cerebrum
    c. limbic system
    d. thalamus

    ANSWER: d

116. Uma just caught sight of a red hummingbird. The neural impulses from her eye will eventually travel to her primary visual cortex, but which brain area must they first pass through?
    a. thalamus
    b. occipital lobe
    c. hypothalamus
    d. hippocampus

    ANSWER: a

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117. What is the function of the hypothalamus?
    a. inhibit emotional reactions like anger and fear
    b. regulate sensory integration
    c. integrate sensory information with motor impulses
    d. regulate basic biological needs

    ANSWER: d

118. Juan is in a state of high arousal. His heart is beating quickly, and he is perspiring. Which brain area is largely responsible for controlling these automatic survival responses?
    a. reticular formation
    b. thalamus
    c. hippocampus
    d. hypothalamus

    ANSWER: d

119. If you destroy one particular area of its brain, a rat will lose all interest in food and may well starve to death. Which area is it?
    a. thalamus
    b. cerebellum
    c. medulla
    d. hypothalamus

    ANSWER: d

120. If a person has a brain tumour that results in a disruption of his or her eating behaviour, which of the following areas is the most likely location of the tumour?
    a. thalamus
    b. hypothalamus
    c. brainstem
    d. cerebellum

    ANSWER: b

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121. By altering brain structures, an evil scientist has created supervillains who have specialized powers or abilities. One of these supervillains seldom feels hungry or thirsty and can go for days without feeling the need to eat or drink. Which brain area has likely been altered?
    a. thalamus
    b. hypothalamus
    c. cerebellum
    d. medulla

    ANSWER: b

122. Which of the following brain structures is most closely associated with the regulation of emotion?
    a. cerebellum
    b. reticular formation
    c. brainstem
    d. limbic system

    ANSWER: d

123. Aretha had severe epilepsy, and surgeons removed portions of her hippocampus to control the severity of her seizures. What ability is likely to be affected by Aretha's surgery?
    a. controlling her urges to eat and drink
    b. forming new memories
    c. expressing emotions appropriately
    d. interpreting sensory information accurately

    ANSWER: b

124. By altering brain structures, an evil scientist has created supervillains who have specialized powers or abilities. One of these supervillains has a fantastic memory and is able to form new memories incredibly well. In this case, which brain structure was likely altered?
    a. pons
    b. hippocampus
    c. hypothalamus
    d. amygdala

    ANSWER: b

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125. Madeleine has learned to fear thunder and lightning storms. Which area of her brain was likely very active when Madeleine's fear was first acquired?
    a. left temporal lobe
    b. amygdala
    c. Wernicke's area
    d. cerebellum

    ANSWER: b

126. By altering brain structures, an evil scientist has created supervillains who have specialized powers or abilities. One of these supervillains is absolutely fearless and willing to undertake extremely dangerous missions. In this case, what brain structure was most likely altered?
    a. amygdala
    b. occipital lobes
    c. cerebellum
    d. medulla

    ANSWER: a

127. Where do "pleasure centres" in the brain appear to be most heavily concentrated?
    a. brainstem
    b. corpus callosum
    c. endocrine system
    d. limbic system

    ANSWER: d

128. Research has identified a "pleasure centre" in rat brains, and researchers have determined that rats will press a lever thousands of times in order to have a tiny electrode stimulate this area of the brain. What brain area is it?
    a. hypothalamus
    b. corpus callosum
    c. frontal lobe
    d. brainstem

    ANSWER: a

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129. If you connect an electrode to a device that will deliver stimulation directly to the brain, where should you insert the electrode in order to cause a sensation of pleasure?
    a. posterior hippocampus
    b. cerebral cortex
    c. medial forebrain bundle
    d. amygdala

    ANSWER: c

130. What is the largest and most complex part of the human brain?
    a. cerebellum
    b. brainstem
    c. limbic system
    d. cerebrum

    ANSWER: d

131. Which brain structure is responsible for the human ability to engage in higher mental activity such as thinking and philosophizing?
    a. limbic system
    b. corpus callosum
    c. cerebellum
    d. cerebrum

    ANSWER: d

132. Which structure connects the two cerebral hemispheres?
    a. pineal gland
    b. pons
    c. corpus callosum
    d. thalamus

    ANSWER: c

133. Vivian has been experiencing unexplained flashes of light and colour, even when her eyes are closed. She recently saw a neurologist who located a small brain tumour. Where is Vivian's tumour likely to be located?
    a. right frontal lobe
    b. temporal lobe
    c. occipital lobe
    d. left parietal lobe

    ANSWER: c

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134. When Taryk slipped on the stairs and hit his head, he saw "stars" for several minutes. The "stars" were most likely a result of activity in which area of the brain?
    a. parietal cortex
    b. occipital lobes
    c. temporal lobes
    d. prefrontal cortex

    ANSWER: b

135. Which lobe of the brain is primarily responsible for processing bodily sensations, like tickling?
    a. frontal
    b. temporal
    c. parietal
    d. occipital

    ANSWER: c

136. Which lobe of the brain, when electrically stimulated, causes people to report physical sensations as if they had been touched?
    a. parietal
    b. temporal
    c. occipital
    d. frontal

    ANSWER: a

137. Padraigh woke up one day, unable to reach properly for objects, even though he could both see them and feel them. His doctor determined that Padraigh had a stroke and that the damage was confined to one portion of his brain. Which part is most likely damaged?
    a. temporal lobe
    b. frontal lobe
    c. parietal lobe
    d. occipital lobe

    ANSWER: c

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138. With which of the following can you expect to have problems if you have damaged your temporal lobe?
    a. hearing
    b. sight
    c. touch
    d. taste

    ANSWER: a

139. Sharif suffered a stroke recently, and now he finds he constantly hears a buzzing sound in his ear. Where is the damage located?
    a. right frontal lobe
    b. occipital lobes
    c. left parietal lobe
    d. temporal lobe

    ANSWER: d

140. Which of the following is strongly correlated with the amount of motor cortex devoted to each body area?
    a. size of the body area
    b. location of the body area
    c. size of the muscles in the body area
    d. diversity of movements of the body area

    ANSWER: d

141. If a monkey's mirror neurons fire when the monkey picks up a grape, when will those same neurons also fire?
    a. When the monkey tastes grapes or even grape juice
    b. When the monkey smells a grape
    c. When the monkey sees a grape
    d. When the monkey sees another monkey pick up a grape

    ANSWER: d

142. If a monkey's mirror neuron fires when he sees another monkey reaching for a stick, in what other situation should that same neuron fire?
    a. when the monkey gets hit with a stick
    b. when the monkey drops the stick
    c. when the monkey also reaches for a stick
    d. when the monkey thinks about a stick

    ANSWER: a

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143. Stefan has suffered brain damage, and as a result, he shows deficits in attention, planning, and getting organized. Which area was likely damaged?
    a. medial forebrain bundle
    b. primary sensory cortex
    c. prefrontal cortex
    d. limbic system

    ANSWER: c

144. Some theorists believe that the brain contains a sort of "executive control system," which is responsible for monitoring, directing, and organizing thought processes. In which area of the brain would you find this system?
    a. prefrontal cortex
    b. medial forebrain bundle
    c. limbic system
    d. thalamus

    ANSWER: a

145. In primary motor cortex, which of the following has the largest area of representation?
    a. legs
    b. eyes
    c. arms
    d. lips

    ANSWER: d

146. If one group of animals is raised in a stimulating environment and another group of animals is raised in a boring environment, which of the following should be enhanced in the brains of animals raised in the stimulating environment?
    a. specificity
    b. dendritic branching
    c. demylenization
    d. distance between neurons

    ANSWER: b

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147. Which of the following is characteristic of stem cells?
    a. They fire in response to an action or to seeing that same action.
    b. They are critical for the perception of pain and other bodily sensations.
    c. They are able to resist the effects of plasticity.
    d. They can be induced to become a specialized cell anywhere in the body.

    ANSWER: d

148. What will be difficult for you if you experience damage to Broca's area?
    a. controlling your arms and legs
    b. being creative
    c. hearing
    d. speaking

    ANSWER: d

149. What is the area of the frontal lobe that plays an important role in the production of speech?
    a. Sperry's area
    b. Broca's area
    c. Wernicke's area
    d. Hebb's area

    ANSWER: b

150. Zeke has no problem understanding what other people say to him, but he has difficulty producing spoken language. If Zeke's problem stems from damage to the cerebral cortex, where do you expect the damage to be?
    a. right parietal lobe
    b. left parietal lobe
    c. right frontal lobe
    d. left frontal lobe

    ANSWER: d

151. If you have difficulty understanding the meaning of speech as a consequence of brain damage, where is the damage most likely to be located?
    a. Broca's area
    b. corpus callosum
    c. pituitary gland
    d. Wernicke's area

    ANSWER: d

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152. Monique is not able to understand spoken language. If Monique's problem stems from damage to the cerebral cortex, where is the damage most likely to be?
    a. left temporal lobe
    b. right temporal lobe
    c. left frontal lobe
    d. right frontal lobe

    ANSWER: a

153. What has traditionally been the main reason for the characterization of the left hemisphere as the "dominant" hemisphere?
    a. evidence that the left hemisphere usually processes complex information
    b. evidence that the left hemisphere usually processes language
    c. the fact that the majority of people are right-handed
    d. evidence that patients use only their left hemisphere for processing information after split-brain surgery

    ANSWER: b

154. What is the main function of Wernicke's area?
    a. speech comprehension
    b. speech production
    c. sensory integration
    d. motor integration

    ANSWER: a

155. If you knew that a surgeon was about to do a surgery to disconnect the cerebral hemispheres, which of the following patients is she most likely to operate on?
    a. a patient in a coma
    b. a patient with epilepsy
    c. a patient with schizophrenia
    d. a patient with antisocial personality disorder

    ANSWER: b

156. Which of the following would be MOST likely to be impaired as a result of damage to the right hemisphere?
    a. language comprehension
    b. sensations from the right side of the body
    c. vision from the left eye
    d. control of the left leg

    ANSWER: d

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157. If you present a sound in the right ear, where will that sound be processed first?
    a. right temporal lobe
    b. left temporal lobe
    c. right parietal lobe
    d. left parietal lobe

    ANSWER: b

158. Because the speech centre is generally located in the left hemisphere of the brain, what would a split-brain patient be unable to describe or name?
    a. an object seen in the left visual field
    b. an object felt with the right hand
    c. an object seen in the right visual field
    d. an object presented directly in front of him or her

    ANSWER: a

159. If you sent the word "banana" to the left hemisphere and the word "cucumber" to the right hemisphere in a patient with a severed corpus callosum, which of the following would the patient be able to name verbally?
    a. both items
    b. neither item
    c. only the banana
    d. only the cucumber

    ANSWER: c

160. Imagine that a picture of a spoon is briefly flashed in the left visual field of an individual with a severed corpus callosum. At the same time, a picture of a cup is briefly flashed in the right visual field. What would this individual likely say based on Roger Sperry's work with split-brain patients?
    a. "I saw a spoon resting in a cup."
    b. "I saw a cup."
    c. "I saw a spoon."
    d. "I didn't see anything."

    ANSWER: b

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161. Imagine that a picture of a blue circle is briefly flashed in the left visual field of an individual with a severed corpus callosum. At the same time, a picture of a red square is briefly flashed in the right visual field. What would this individual likely say based on Roger Sperry's work with split-brain patients?
    a. "I saw a blue circle."
    b. "I didn't see anything."
    c. "I saw a red square."
    d. "I saw a blue circle around a red square."

    ANSWER: c

162. If a right-handed subject whose corpus callosum has been cut were asked to reproduce a drawing, what could we predict?
    a. best performance by the left hand
    b. best performance by the right hand
    c. equal performance by the two hands
    d. an inability to draw with either hand

    ANSWER: a

163. On average, which of the following tasks is performed most quickly by the right hemisphere?
    a. reading and naming items verbally
    b. hearing and listening
    c. processing visual information from the right visual field
    d. locating and recognizing objects or people

    ANSWER: d

164. Chase is using a single earphone to listen in on a conversation. Based on the research that investigated hemispheric specialization in intact brains, what could we suggest in order for Chase to recognize the words he hears most quickly?
    a. put the earphone in his right ear
    b. hum lightly to cancel out the background noise
    c. close his eyes while he listens to the conversation
    d. watch the conversation, in addition to listening

    ANSWER: a

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165. What is the left hemisphere's specialty in both split-brain people and neurologically intact people?
    a. spatial perception
    b. motor initiation
    c. visual recognition
    d. verbal processing

    ANSWER: d

166. Which of the following is NOT primarily controlled by the left hemisphere of the brain?
    a. visual-spatial abilities
    b. the right side of the body
    c. producing language
    d. understanding language

    ANSWER: a

167. Which of the following is LEAST associated with left hemisphere functioning?
    a. reading
    b. speaking
    c. writing words
    d. musical recognition

    ANSWER: d

168. Nadine had a stroke that was confined to the right side of her brain. What sort of task will be most difficult for Nadine, based on hemispheric lateralization studies?
    a. mathematics and logical reasoning skills
    b. fine motor coordination, such as for handwriting
    c. spatial skills, such as fitting together puzzle pieces
    d. language and communication skills

    ANSWER: c

169. Which of the following parts of the brain is most likely to play a major role in the work of artists, architects, and engineers, who must rely heavily on visual-spatial skills?
    a. corpus callosum
    b. left hemisphere
    c. right hemisphere
    d. cerebellum

    ANSWER: c

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170. Which of the following is associated with brains that have low levels of lateral specialization?
    a. reduced likelihood of mental disorder
    b. low IQ scores
    c. poor hand-eye coordination
    d. creativity

    ANSWER: b

171. What is the function of the pituitary gland?
    a. It controls the hypothalamus.
    b. It is the master gland of the endocrine system.
    c. It releases testosterone and estrogen in order to affect the gonads.
    d. It integrates information about the status of all organs.

    ANSWER: b

172. What does the endocrine system do?
    a. It connects the two cerebral hemispheres of the brain.
    b. It secretes hormones.
    c. It manufactures myelin.
    d. It forms the basis of reflexive behaviours.

    ANSWER: b

173. What is a hormone?
    a. an enzyme produced by the hypothalamus
    b. a chemical stored in the synapse
    c. a neurotransmitter that acts on organs
    d. a chemical secreted into the blood by a gland

    ANSWER: d

174. Which system is malfunctioning for individuals who have hormonal imbalances?
    a. reticular
    b. endocrine
    c. dopaminergic
    d. limbic

    ANSWER: b

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175. How are hormones transported throughout the body?
    a. within the lymph nodes
    b. by the nervous system
    c. through cerebrospinal fluid
    d. by the bloodstream

    ANSWER: d

176. Hormones tend to be released in a pulsatile pattern. What does this mean?
    a. They are released at an unpredictable rate.
    b. They are released on demand.
    c. They are released in a steady, invariant rhythm.
    d. They are released in brief bursts at various times.

    ANSWER: d

177. Which brain region controls the endocrine system?
    a. cerebellum
    b. hypothalamus
    c. thalamus
    d. medulla

    ANSWER: b

178. What is the so-called "master gland" of the endocrine system?
    a. gonad
    b. pituitary
    c. adrenal
    d. hypothalamus

    ANSWER: b

179. Which of the following does NOT belong with the other three?
    a. gonad
    b. adrenal
    c. pituitary
    d. thalamus

    ANSWER: d

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180. Which of the following hormones is associated with bonding and trust?
    a. gonadotropin
    b. oxytocin
    c. estrogen
    d. insulin

    ANSWER: b

181. Which gland secretes hormones associated with the development of secondary sex characteristics?
    a. pineal
    b. pancreas
    c. thyroid
    d. gonad

    ANSWER: d

182. Some individuals reach puberty before others. Which glands would be important to examine if you wished to explore the role of the endocrine system in producing these differences?
    a. parathyroid
    b. pancreas
    c. thyroid
    d. gonads

    ANSWER: d

183. What do we call the interdisciplinary field that studies the influence of inherited traits on complex behaviour?
    a. cross-cultural anthropology
    b. behavioural genetics
    c. physiological psychology
    d. ethology

    ANSWER: b

184. Which of the following is true of genes but not chromosomes?
    a. They contain gonadotropins.
    b. They contain DNA.
    c. They are found in zygotes.
    d. There are thousands of them in each sperm or egg.

    ANSWER: d

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185. What is the genetic complement of all cells in the human body, except sex cells?
    a. 23 chromosomes
    b. 46 chromosomes
    c. 23 recessive genes and 23 dominant genes
    d. 46 pairs of chromosomes

    ANSWER: b

186. How many chromosomes does a zygote contain?
    a. 1 pair
    b. 2 pairs
    c. 23 pairs
    d. 46 pairs

    ANSWER: c

187. How many possible combinations of chromosomes are possible when you combine one person's sperm with another person's egg?
    a. 529, or 23^2
    b. 2,116, or 46^2
    c. 8 million, or 2^{23}
    d. 70 trillion, or 2^{46}

    ANSWER: b

188. What do we call a pairing of genes with one dominant and one recessive gene?
    a. homozygous
    b. phenotypic
    c. heterozygous
    d. polygenic

    ANSWER: c

189. What do we call the member of a gene pair that is more influential in terms of expressing a trait?
    a. phenotypic
    b. expressive
    c. recessive
    d. dominant

    ANSWER: d

190. Assume that developing a sixth toe is a recessive trait that is controlled by a single pair of genes. If a child has six toes, but both the child's parents have normal feet, what can you conclude?
    a. The child is heterozygous for the trait in question.
    b. Both parents are heterozygous for the trait in question.
    c. Both parents are homozygous for the trait in question.
    d. The child is adopted.

    ANSWER: b

191. What is the term for the specific pattern of genes that an individual inherits at conception?
    a. phenotype
    b. zygote
    c. polygenic inheritance
    d. genotype

    ANSWER: d

192. What is a person's genotype?
    a. their biological or chromosomal sex
    b. the maternal contribution to their genetic makeup
    c. their genetic makeup
    d. their observable characteristics and traits

    ANSWER: c

193. Which of the following is determined at conception and is essentially fixed forever?
    a. phenotype
    b. somatotype
    c. genotype
    d. zygote

    ANSWER: c

194. Shane and Blane are monozygotic twins. However, people seldom get the two brothers mixed up because Blane is almost two inches shorter than Shane. What can you conclude based on this evidence?
    a. Because the brothers display different phenotypes, they must also have different underlying genotypes.
    b. Even though both brothers share the same genotype, they display different phenotypes.
    c. Even though both brothers display the same phenotype, they have different genotypes.
    d. Blane is heterozygous for the "tallness" trait, and Shane is homozygous for the "tallness" trait.

    ANSWER: b

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195. If a trait is described as polygenic, what does that mean?
    a. It is controlled by a single gene.
    b. It is controlled by a single chromosome.
    c. It is controlled by more than one pair of genes.
    d. It is controlled by genes on all 46 chromosomes.

    ANSWER: c

196. Skin colour is determined by three to five gene pairs. Based on this information, what type of trait is skin colour?
    a. a monogenic trait
    b. a polygenic trait
    c. a homozygous trait
    d. a heterozygous trait

    ANSWER: b

197. Why are all human studies about the interaction of genes and environment correlational?
    a. to assess the effects of modern child-rearing methods
    b. to demonstrate the empirical nature of psychological research
    c. to meet ethical standards in research
    d. to disentangle the effects of genetics and experience on behavioural traits

    ANSWER: c

198. Which two individuals would we expect to have the GREATEST degree of phenotypic similarity?
    a. mother and daughter
    b. monozygotic twins
    c. dizygotic twins
    d. father and son

    ANSWER: b

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199. Four sisters were all raised in the same household by parents who are very creative and artistic. Anna and Betty are the biological children of their parents, while Cassie and Deanna were adopted as infants into the family. Like their parents, Anna and Betty are artistically inclined and enjoy working on creative projects. Cassie and Deanna are not particularly interested in artistic endeavours even though they've received a lot of exposure to art and a lot of encouragement for creative work. Which of the following conclusions would be reasonable if this pattern occurred in a variety of similar families?
    a. Environmental factors have more influence than genetic factors in artistic interest.
    b. Both genetic and environmental factors contribute equally to artistic interest.
    c. Genetic factors have more influence than environmental factors in artistic interest.
    d. Neither genetic nor environmental factors contribute to artistic interest.

    ANSWER: c

200. Which of the following supports the hypothesis that intelligence is influenced by environmental factors?
    a. Twins reared apart have similar intelligence scores.
    b. Monozygotic twins are more similar than dizygotic twins on intelligence measures.
    c. Identical twins do not have identical intelligence scores.
    d. The correlations between dizygotic twins' intelligence scores are around 0.60.

    ANSWER: c

201. Londra and Sondra are identical twins who have been raised together in the same home. Londra has developed a psychological disorder, but Sondra does not appear to have the same disorder. What does this suggest about the disorder if this pattern holds for other identical twins?
    a. Genetic factors have more influence than environmental factors in this disorder.
    b. Both genetic and environmental factors contribute equally to this disorder.
    c. Neither genetic nor environmental factors contribute to this disorder.
    d. Environmental factors have more influence than genetic factors in this disorder.

    ANSWER: d

202. Phong and Phan are identical twins who have been raised apart in separate adoptive homes. However, both brothers have developed the same psychological disorder. What does this evidence suggest?
    a. Genetic factors have more influence than environmental factors in this disorder.
    b. Environmental factors have more influence than genetic factors in this disorder.
    c. Neither genetic nor environmental factors contribute to this disorder.
    d. Both genetic and environmental factors contribute equally to this disorder.

    ANSWER: a

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203. Mary and Celine are identical twins who have been raised apart in separate adoptive homes. Mary has developed a psychological disorder, but Celine does not appear to have the same disorder. What does this evidence suggest?
    a. Environmental factors have more influence than genetic factors in this disorder.
    b. Both genetic and environmental factors contribute equally to this disorder.
    c. Genetic factors do not influence this disorder.
    d. Genetic factors have more influence than environmental factors in this disorder.

    ANSWER: a

204. What can we conclude about the heritability of intelligence, based on adoption studies?
    a. Genotype determines intelligence.
    b. Adoption studies do not provide enough evidence to assess the relative contributions of genes and experience on intelligence.
    c. Family environment is the strongest influence on intelligence.
    d. Both genes and environment contribute to intelligence.

    ANSWER: d

205. Which of the following comparison groups has a significant similarity with adopted children, based on research on adopted children and intelligence?
    a. their biological parents
    b. both sets of parents
    c. their adoptive parents
    d. neither set of parents

    ANSWER: b

206. Donavon was adopted at birth by Mr. and Mrs. Erndt. Although neither of his biological parents had much musical ability, Donavon has become an excellent pianist, just like Mr. Erndt. What would this evidence suggest if this pattern held up across multiple adoption studies?
    a. Genetic factors have more influence than environmental factors in musical talent.
    b. Environmental factors have more influence than genetic factors in musical talent.
    c. Neither genetic nor environmental factors contribute to musical talent.
    d. Both genetic and environmental factors contribute equally to musical talent.

    ANSWER: b

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207. If you are working on the Human Genome Project, which of the following types of traits are you most likely to be able to map?
    a. behavioural traits, like aggression
    b. physical traits that are highly polygenic
    c. dichotomous traits that are either present or absent
    d. polygenic traits with high worldwide variance

    ANSWER: c

208. What do we know about the heritability of schizophrenia?
    a. Schizophrenia is primarily social in origin, rather than biological.
    b. Schizophrenia is inherited through the male line, which is why we don't see heritability from mothers to children.
    c. Schizophrenia is essentially a personality variant, which is highly heritable.
    d. Schizophrenia likely results from an inherited vulnerability that interacts with experience.

    ANSWER: d

209. Dean is conducting a study in which he exposes rats to different amounts of noise to cause different amounts of stress. He then evaluates whether the offspring of those rats have different reactions to stress. What sort of study is Dean conducting?
    a. epigenetic study
    b. behaviour genetic study
    c. genetic mapping study
    d. polygenic study

    ANSWER: a

210. Which of the following statements about Charles Darwin and the theory of evolution is NOT accurate?
    a. He suggested that variations in hereditary traits might affect organisms' ability to obtain resources.
    b. He identified natural selection as the mechanism that orchestrates the process of evolution.
    c. He was the first person to describe the process of evolution.
    d. He noted that some of the characteristics of organisms are passed down from one generation to the next.

    ANSWER: c

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211. Imagine that you and Charles Darwin are looking at a newborn litter of kittens, and the kittens are all a bit different from one another. As you observe the kittens, you ask Mr. Darwin which of the kittens will be most "fit" in terms of natural selection. What would Mr. Darwin be most likely to say in response to your question?
    a. "The one who has the most kittens of its own."
    b. "Because they are related and carry the same genes, they all have equal fitness."
    c. "The one that is the strongest and the most aggressive."
    d. "The one that requires the smallest amount of resources."

    ANSWER: a

212. If our planet were a place where each individual has the opportunity to acquire all necessary resources, and each individual produces exactly one offspring in his or her lifetime, what impact would this have on the process of evolution by natural selection?
    a. It would not occur, because there would be no opportunity for some traits to be passed on more often than other traits.
    b. It would not change, because there would still be some individuals who were better than others.
    c. It would not occur because there would be no differences between individuals.
    d. It would have no impact on natural selection, but it would lead to an increase in mutations.

    ANSWER: a

213. Which of the following is the key factor in evolutionary change, according to Darwin's theory of evolution?
    a. interaction of heredity and the environment
    b. genetic transmission of learned behaviour
    c. relative success of aggressive predators
    d. variations in reproductive success

    ANSWER: d

214. What do we call the process by which genes that lead to a survival or reproductive advantage become more frequent in the next generation?
    a. natural selection
    b. polygenic transmission
    c. epigenetics
    d. genetic dominance

    ANSWER: a

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215. Which of the following aspects of evolution is mainly based on chance alone?
    a. natural selection
    b. adaptations
    c. gene flow
    d. genetic drift

    ANSWER: d

216. If an individual is born with a genetic mutation, what will happen to that mutation in an evolutionary sense?
    a. The individual will die, so the mutation cannot be passed on to subsequent generations.
    b. If the mutation is beneficial, then it will be selected for and become more common.
    c. It is an isolated genetic anomaly, so it cannot be spread to others in the population.
    d. Mutations are part of the phenotype, not the genotype, so they won't affect fitness.

    ANSWER: b

217. What occurs when gene frequencies in a population shift because some individuals leave the population and others enter it?
    a. genetic drift
    b. mutation
    c. natural selection
    d. gene flow

    ANSWER: d

218. Which of the following is most likely to contribute to the emergence of new species?
    a. minimal gene flow between populations
    b. genetic drift within a single generation
    c. increases in gene flow between populations
    d. multiple mutations within a population

    ANSWER: a

219. What do we call an inherited characteristic that solves a survival problem?
    a. dominant gene
    b. genetic mutation
    c. adaptation
    d. fitness

    ANSWER: c

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Chapter 3 - The Biological Bases of Behaviour

220. Humans' taste preferences for fatty substances would have conferred a survival advantage for our ancestors, but in our modern environment, where we have an overabundance of food, that preference can end up causing obesity and illness. What would an evolutionary psychologist say about this trend?
    a. It tends to occur when recessive genes mutate into dominant traits.
    b. It is an example of an adaptation that has become a liability.
    c. It is a consequence of genetic drift across several generations.
    d. It represents the paradox of inclusive fitness.

    ANSWER: b

221. Why is it more difficult to study the evolution of behaviour compared to studying the evolution of physical traits?
    a. Behaviours may occur infrequently and may not last very long.
    b. Natural selection generally does not operate on behaviours.
    c. Behaviours are more susceptible to genetic drift.
    d. Behaviours tend to evolve more slowly.

    ANSWER: a

222. What makes a behaviour adaptive, according to evolutionary theory?
    a. It decreases the amount of genetic drift in the population.
    b. It increases the likelihood of favourable mutations.
    c. It aids the survival or reproduction of an organism and its offspring.
    d. It increases the probability of natural selection.

    ANSWER: c

223. Which of the following statements most accurately reflects the roles of heredity and environment in shaping our behaviour?
    a. Heredity plays an indirect role by influencing the physiology that interacts with the environment.
    b. Heredity affects most physical behaviour, and environment affects most psychological behaviour.
    c. Genes exert their influence on behaviour with little impact from environmental factors.
    d. Genetic factors have surprisingly little influence on behaviour.

    ANSWER: a

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Chapter 3 - The Biological Bases of Behaviour

224. In your text, we saw that schizophrenia may be a function of abnormalities in neurotransmitter activity, structural defects in the brain, and genetic vulnerability. Which of the following unifying themes of your text do these findings support?
    a. Behaviour is determined by multiple causes.
    b. Psychology is empirical.
    c. Psychology evolves in a sociohistorical context.
    d. Behaviour is shaped by our cultural heritage.

    ANSWER: a

225. Much of what we know about left brain/right brain differences would not be known without systematic research and analysis. The current interest in the right brain/left brain phenomenon highlights the importance of approaching topics such as this from which point of view?
    a. conjectural
    b. empirical
    c. anecdotal
    d. subjective

    ANSWER: b

226. Kim is good at reading maps and enjoys listening to music. What would some researchers suggest about Kim, according to the Personal Application, Evaluating the Concept of "Two Minds in One"?
    a. She is "left-brained."
    b. She is "mid-brained."
    c. She is "hemispheric."
    d. She is "right-brained."

    ANSWER: d

227. In the Personal Application, Evaluating the Concept of "Two Minds in One," what was the conclusion regarding left-brain and right-brain thinking?
    a. Right-brain people benefit most from learning to do more left-brain activities.
    b. There is strong evidence to support modification of school curriculum to support both types of thinking.
    c. Career choice is strongly correlated with which side of the brain is most dominant.
    d. The link between hemispheric lateralization and ability is speculative and unsupported.

    ANSWER: d

228. Which of the following features do all of the studies highlighting the possible importance of early experience in animals have in common?
   a. The researchers used very small samples.
   b. They used species that cannot be logically compared to humans.
   c. They used relatively crude measures of brain growth.
   d. They used extreme conditions to make their comparisons.

   ANSWER: d

229. Dr. Sandra Witelson found that Einstein's brain was similar in terms of size and weight to most other brains, but that it had certain exceptionalities, including a wider parietal region and a distinct sylvian fissure. Which of the following is a reasonable statement about Einstein's brain given what we know about the role of environment for brain plasticity?
   a. Einstein was born with brain anomalies that led to his mathematical genius, and those anomalies were clearly visible in the autopsy. His experience would not change the actual structure of the brain.
   b. It must be due to the effects of practice that Einstein was so mathematically brilliant, given that he had brain damage in an area that is particularly important for mathematical reasoning.
   c. Einstein may have been born with a predisposition toward mathematical genius, or his brain may have been changed as a result of so much practice, but his genius is likely to have been the result of some combination of genetics and experience.
   d. There is no relationship between the structure of the brain and intelligence, because learning changes the function of the brain rather than the structure.

   ANSWER: c

230. Which of the following is a valid hypothesis, considering both the Hebbian Learning Rule and evidence that there is a decline in the number of synapses in the human brain after about age 1?
   a. Because we use only 10 percent of our brain at any given time, the decline in synapses after age 1 has no impact on functioning.
   b. We create new connections in infancy, and unless all the necessary connections are made before we are a year old, we will have difficulty learning for the rest of our lives because we start losing brain cells so early.
   c. Although the number of synapses decreases throughout the life span, the number of neurons does not decrease, and having a large number of neurons is more important than having a large number of synapses.
   d. Although creating new connections between neurons is important, it is also important to get rid of unnecessary or outdated connections in order to enhance the efficiency of processing within our brains.

   ANSWER: d

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Chapter 3 - The Biological Bases of Behaviour

231. Drug 8K43 is a stimulant drug that acts by blocking the reuptake of dopamine in the nervous system. This means that dopamine stays in the synapse longer and continues to stimulate the postsynaptic neuron. Based on this information, what can we infer about the effects of dopamine on the postsynaptic neuron?
    a. It produces excitatory postsynaptic potentials.
    b. It blocks the receptor channels in the postsynaptic neuron.
    c. It cancels out excitatory potentials generated by other neurons.
    d. It reduces inhibitory postsynaptic potentials.

    ANSWER: a

232. Which of the following does NOT belong with the others?
    a. stereotaxic instrument
    b. computerized tomography scan
    c. electroencephalograph
    d. reticular activating system

    ANSWER: d

233. Which of the following does NOT belong with the others?
    a. hemispheric lateralization
    b. positron emission tomography
    c. magnetic resonance imaging
    d. electroencephalography

    ANSWER: a

Trevor

Trevor is going for a run. He starts thinking about all the things that he needs to do throughout his day, and he decides that after he showers he will study for his midterm for a little while before he goes to work for the evening. As Trevor rounds the corner near home, he sees something move near his feet and then feels a sharp pain in his right leg. At this point, Trevor's heart rate increases substantially, as he spins away from the dog that just bit him. As the dog's owner apologizes and puts the dog back on its leash, Trevor's heart rate slows down and he then makes his way home.

234. As Trevor's heart rate is coming back down after the dog bite, he is feeling less fear. Which division of the nervous system is responsible for the physiological changes associated with calming back down?
    a. peripheral
    b. sympathetic
    c. somatic
    d. parasympathetic

    ANSWER: d

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Chapter 3 - The Biological Bases of Behaviour

235. As Trevor is running, what area of his brain is sending signals to his muscles so that they will move?
    a. motor cortex in the parietal lobes
    b. somatosensory cortex in the parietal lobes
    c. motor cortex in the frontal lobes
    d. somatosensory cortex in the frontal lobes

    ANSWER: c

236. When Trevor feels the pain in his right leg, what area of the brain responds to this sensation?
    a. left parietal lobe
    b. right temporal lobe
    c. left frontal lobe
    d. right prefrontal cortex

    ANSWER: a

237. As Trevor plans out his day, which area of his brain is processing these higher-level thoughts?
    a. limbic system
    b. prefrontal cortex
    c. medial temporal lobes
    d. Wernicke's area

    ANSWER: b

238. What would an evolutionary psychologist say about Trevor's physiological responses to the frightening experience of being bitten?
    a. Fight or flight responses are adaptations that evolved through natural selection.
    b. The increase in heart rate is caused by an overactive hypothalamus.
    c. Such responses put Trevor at risk for developing an anxiety disorder.
    d. Fight or flight responses are a maladaptive consequence of exposure to danger.

    ANSWER: a

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Chapter 3 - The Biological Bases of Behaviour

239. Choose a specific neurotransmitter or class of neurotransmitters and discuss its impact on behaviour.

ANSWER: Acetylcholine: The only neurotransmitter between motor neurons and voluntary muscles, therefore mediates all voluntary movement. Also contributes to attention, arousal, and memory. Alzheimer's disease is associated with an insufficient supply of this neurotransmitter.

Monoamines (dopamine, serotonin, norepinephrine): Dopamine—mediates voluntary movement. A deficiency is associated with Parkinson's disease; overactivity is associated with schizophrenia. Serotonin—regulates sleeping and waking. Norepinephrine—also regulates arousal. A deficiency is associated with depression.

GABA: Has inhibitory effects only. Too little GABA is associated with anxiety

Endorphins: Resemble opiate drugs in structure and effects contribute to pain relief and perhaps to some pleasurable emotions.

·

· Glutamate: Amino acid with both excitatory and inhibitory effects. Implicated in learning and memory.

240. Compare and contrast the nervous system and the endocrine system.

ANSWER: Both are internal communication systems; both use chemical messengers. The nervous system utilizes neurotransmitters, which travel short distances at high speeds from neuron to neuron; the endocrine system uses hormones, which are slow acting and travel long distances through the blood stream. Some chemicals can be both a neurotransmitter and a hormone (like norepinephrine, for example).

241. Compare and contrast lesioning and electrical stimulation of the brain.

ANSWER: Both are methods of studying brain function; both involve the introduction of electric current into a specific brain structure via an implanted electrode. Lesioning uses a fairly strong electric current to destroy brain tissue, thus eliminating the relevant behaviour or function from the subject's repertoire. Since lesioning produces permanent brain damage, it is employed with animal subjects only. Electrical stimulation of the brain introduces a weak current to artificially stimulate a brain structure and produce a behavioural response. It does not permanently damage the brain and so, under certain medical circumstances, may be used with humans; however, the technique is more frequently applied to animals.

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Chapter 3 - The Biological Bases of Behaviour

242. Assume that trait X is primarily an inherited characteristic. Imagine that trait X is investigated using family studies, twin studies, and adoption studies. Briefly describe each of these three methods and indicate what information each would be expected to yield regarding trait X.

ANSWER:

- Family studies: There should be more phenotypic similarity on trait X among relatives who share a greater percentage of genes. For example, there should be more similarity on trait X between identical twins than among siblings, who in turn should exhibit more similarity than cousins.
- Twin studies: Identical twins should exhibit more similarity on trait X than fraternal twins.
- Adoption studies: Children adopted in early infancy should more closely resemble their biological parents on trait X than they do their adoptive parents.

243. Imagine the following scenario: Administrators at the local high school have been impressed by recent media reports of cerebral hemispheric specialization, and are considering curricular reform to achieve a better balance between "left-brained" and "right-brained" activities. You have been hired to advise them on this issue. What would your recommendation be, and why?

ANSWER: Although there is some evidence that the cerebral hemispheres are specialized to a degree, there is no basis for saying that people have two independent streams of consciousness or that each hemisphere has its own cognitive style. There is little basis for labelling some people as "left-brained" and others as "right-brained," or for relating these differences to distinctive task preferences, personalities, or vocations. All information reaches both hemispheres, since they communicate via the corpus callosum. Thus, cerebral specialization is not a sound basis for educational reform.

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Chapter 4 - Sensation and Perception

1. Which of the following reflects a distinction between the process of sensation and the process of perception?
   a. Sensation is not necessary for perception, but perception is necessary for sensation.
   b. Sensation occurs at the level of the brain, while perception occurs at the level of the mind.
   c. Sensation reflects the proximal stimulus, while perception reflects the distal stimulus.
   d. Sensation occurs at the level of the sense organs, while perception occurs at the level of the brain.

   ANSWER: d

2. Light has entered Jeff's eye and has stimulated receptors there. Which of the following terms describes this process?
   a. detection
   b. perception
   c. proximal stimulation
   d. sensation

   ANSWER: d

3. A neural signal from Mary's taste bud has travelled to her cortex, and she experiences enjoyment of a sweet flavour. Which of the following terms describes this process?
   a. sensation
   b. distal stimulation
   c. detection
   d. perception

   ANSWER: d

4. What is your absolute threshold?
   a. the point at which you detect any portion of a stimulus
   b. the point at which you detect a stimulus that registers on sensory memory
   c. the point at which you detect any stimulus set point
   d. the point at which you detect a stimulus about half of the time

   ANSWER: d

5. Werner was having his hearing tested, and a number of the tones that were presented were so faint he was not able to detect them. What can you say about the faint sounds?
   a. They are below Werner's absolute threshold for sound.
   b. They cannot create a just noticeable difference.
   c. They cause weak action potentials.
   d. They fall below Werner's adaptation level for sound.

   ANSWER: a

6. Juanita was drinking some warm punch, and she thought she could just detect a faint taste of nutmeg in the punch. When she took another sip, the taste wasn't there. On the third sip, she could just make out the taste of nutmeg again. What could you say about the taste of nutmeg in this situation?
   a. It falls just below her taste constancy level.
   b. It produces a proximal rather than distal stimulus.
   c. It is just at her absolute threshold for taste.
   d. It produces a just noticeable difference.

   ANSWER: c

7. Giovanni was watching the night sky on a clear evening in November. He noticed that sometimes when he looked directly overhead he could detect a very faint star. A few minutes later, it seemed that the star had disappeared and then it "appeared" again. How would you describe the light from the star in this case?
   a. It produces a just noticeable difference.
   b. It produces a distal stimulus.
   c. It falls just below Giovanni's level for perceptual invariance.
   d. It is just at Giovanni's absolute threshold for light.

   ANSWER: d

8. Which of the following is being measured if a subject is presented with a series of light bulb pairs of different wattages and is asked whether the members of each pair differ in brightness?
   a. subject's visual acuity
   b. subject's absolute threshold for brightness
   c. subject's just noticeable difference for brightness
   d. physical intensity difference between the two lights

   ANSWER: c

9. If a 100 Hz tone had to be increased to 101 Hz for a subject to just notice the difference, what would you change a 1000 Hz tone to in order for that subject to notice the difference?
   a. 1010 Hz
   b. 1050 Hz
   c. 1100 Hz
   d. 1200 Hz

   ANSWER: a

10. Evelyn turned up the thermostat from 68 degrees to 70 degrees; however, she doesn't think it feels any warmer and she wants to turn it up even higher. Her roommate thinks that it is now too hot, and she wants to turn the thermostat back down. How does Evelyn's just noticeable difference compare to her roommate's?
    a. Evelyn's is smaller.
    b. Evelyn's is lower.
    c. Evelyn's is larger.
    d. Evelyn's is higher.

    ANSWER: c

11. Raul is making potato soup. His roommate tastes it and tells Raul it is great, but Raul thinks it needs more salt. He adds just a little salt, but doesn't think that he has added enough because he doesn't detect a difference. However, his roommate tastes it again and tells Raul that the soup is now perfect, with just the right amount of salt. Which of the following is most accurate?
    a. Raul's roommate has a higher absolute threshold than does Raul.
    b. Raul has more taste cells on the back of his tongue than does his roommate.
    c. Raul is a nontaster.
    d. Raul's roommate can detect a smaller just noticeable difference than Raul can.

    ANSWER: d

12. When Celeste was playing her stereo at 40 decibels and she turned it up to 42 decibels, she could notice that it was louder. If Celeste's stereo were playing at 80 decibels, what should her just noticeable difference be?
    a. 1 decibel, half as much as it was at 40 decibels
    b. 2 decibels, the same as it was at 40 decibels
    c. 3 decibels, 50 percent more than it was at 40 decibels
    d. 4 decibels, twice as much as it was at 40 decibels

    ANSWER: d

13. You have a lamp with a three-way light bulb. You can use the light at 50 watts, 100 watts, or 150 watts. When you change between settings, which of the following changes will be perceived as a larger increase in brightness?
    a. from off to 50 watts
    b. from 50 to 100 watts
    c. from 100 to 150 watts
    d. Each change will be perceived as an equivalent difference.

    ANSWER: a

14. In the signal-detection method, what do we call it when a subject detects a stimulus when no stimulus is actually present?
    a. hit
    b. correct rejection
    c. miss
    d. false alarm

    ANSWER: d

15. Which type of signal-detection error becomes more likely when someone is not expecting the stimulus?
    a. correct rejection
    b. miss
    c. accurate hit
    d. false alarm

    ANSWER: b

16. In signal detection, which type of error is more likely if you are expecting the stimulus to occur?
    a. false alarm
    b. miss
    c. correct rejection
    d. noise hit

    ANSWER: a

17. Jerry, a nuclear operator, must monitor 50 different gauges that keep track of various aspects of the nuclear reactor. Which of the following theories provides the most specific predictions for Jerry's likelihood of detecting any changes or problems?
    a. signal-detection
    b. Fechner's law
    c. *Pragnanz*
    d. Weber's law

    ANSWER: a

18. Joan was sitting talking with some friends when she suddenly left the room to check on her baby. She was sure she heard little Emily cry out, but when she checked, Emily was sleeping peacefully. What would you call Joan's response based on signal-detection theory?
    a. hit
    b. false alarm
    c. correct rejection
    d. miss

    ANSWER: b

19. Dalton was sitting in the hallway outside his chemistry class. Some students said they thought they could smell smoke, but Dalton didn't smell anything. When they all checked the lab to see if there were any problems, everything was fine and nothing was burning. What would you call Dalton's response based on signal-detection theory?
    a. false alarm
    b. low threshold
    c. high threshold
    d. correct rejection

    ANSWER: d

20. Your criterion for "hearing" mysterious noises at night may change after a rash of burglaries in your neighbourhood. Which of the following best explains this change?
    a. Fechner's law
    b. signal-detection theory
    c. Weber's law
    d. sensory adaptation

    ANSWER: b

21. What does "subliminal" mean?
    a. deceptive
    b. below threshold
    c. barely perceptible
    d. superimposed

    ANSWER: b

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Chapter 4 - Sensation and Perception

22. Which of the following statements about subliminal perception is most accurate?
    a. Subliminal perception is possible only if sensory adaptation has taken place.
    b. Although subliminal perception was once dismissed by scientists as preposterous, recent evidence suggests it has some effects on behaviour.
    c. Scientists have conclusively demonstrated that perception simply cannot take place without conscious awareness.
    d. Recent research suggests that subliminal messages can be quite persuasive in convincing us to buy products we don't want.

    ANSWER: b

23. What have researchers typically found when they have attempted to demonstrate subliminal perception effects in the real world?
    a. Such effects are substantial and a potential cause for public concern.
    b. People are much more likely to be influenced by "positive" subliminal stimuli (e.g., self-help tapes) than "negative" ones (e.g., subliminal advertising).
    c. People are much more likely to be influenced by "negative" subliminal stimuli than "positive" ones.
    d. Such effects are so weak as to be of little, if any, practical importance.

    ANSWER: d

24. What will eventually occur if you stare at an unchanging image for a long time?
    a. You will experience sensory adaptation.
    b. You will have a higher absolute threshold.
    c. You will perceive a just noticeable difference.
    d. You will experience sensory overload.

    ANSWER: a

25. What is sensory adaptation?
    a. a cause of false alarms in signal detection
    b. increase in sensitivity after prolonged stimulation
    c. decline in sensitivity after prolonged stimulation
    d. weakening of a neurotransmitter

    ANSWER: c

26. You enter a room and notice a distinctive new odour. After a bit of time, you no longer notice the odour. What phenomenon does this illustrate?
    a. sensory adaptation
    b. *Pragnanz*
    c. progressive desensitization
    d. false alarm

    ANSWER: a

27. Yaniv has been working for the past two hours, and the hum of his laptop computer that he found so annoying when he started no longer bothers him. Which of the following processes is illustrated by the change in Yaniv's sensitivity to the laptop noise?
    a. adjusting just noticeable differences
    b. sensory adaptation
    c. perceptual assimilation
    d. perceptual invariance

    ANSWER: b

28. Sonja put on a new watch this morning and found it uncomfortable because it was so much heavier than her old watch. However, by noon, Sonja has forgotten that she is even wearing the watch. Which of the following processes is illustrated by the change in Sonja's sensitivity to the pressure of the watch?
    a. perceptual assimilation
    b. signal detection
    c. adjusting just noticeable differences
    d. sensory adaptation

    ANSWER: d

29. Which of the following CANNOT be explained by sensory adaptation?
    a. feeling comfortable in a cold swimming pool after being in for a few minutes
    b. getting used to the smell of the perfume you are wearing
    c. getting used to the touch of your clothes on your skin
    d. feeling no sensation in a foot that has lost circulation

    ANSWER: d

30. What aspect of perception is affected by the wavelength of light?
    a. saturation
    b. light purity
    c. brightness
    d. colour

    ANSWER: d

31. What affects our perception of the brightness of a colour?
    a. saturation of light waves
    b. purity of light waves
    c. amplitude of light waves
    d. wavelength of light waves

    ANSWER: c

32. Jose is wearing a blue shirt, and Evan is wearing a red shirt. What is the difference between the two shirts, in terms of light waves?
    a. Jose's reflects higher amplitude light waves than Evan's.
    b. Jose's reflects shorter light waves than Evan's.
    c. Jose's reflects longer light waves than Evan's.
    d. Jose's reflects lower amplitude light waves than Evan's.

    ANSWER: b

33. What aspect of visual perception is responsive to differences in the amplitude of light waves?
    a. colour
    b. purity
    c. saturation
    d. brightness

    ANSWER: d

34. What aspect of visual perception will change if you change the purity of the light waves?
    a. saturation
    b. colour constancies
    c. hue
    d. brightness

    ANSWER: a

35. If your lens is very round, which of the following will you see best?
    a. close objects
    b. distant objects
    c. moving objects
    d. brightly coloured objects

    ANSWER: a

36. As people age, the lens of the eye loses its ability to accommodate, and it tends to remain flat instead of becoming fat and round. What does this suggest about the effects of aging on vision?
    a. We become less likely to detect differences in light purity.
    b. We become more likely to detect differences in brightness and hue.
    c. We lose the ability to focus on objects that are close.
    d. We lose the ability to focus on objects in the distance.

    ANSWER: c

37. What is the structure that controls the size of the pupil?
    a. lens
    b. vitreous humour
    c. cornea
    d. iris

    ANSWER: d

38. What changes in size, in order to regulate the amount of light that enters the eye?
    a. cornea
    b. pupil
    c. retina
    d. lens

    ANSWER: b

39. What happens to the pupil of the eye in bright sunlight?
    a. It constricts.
    b. It flattens.
    c. It dilates.
    d. It closes.

    ANSWER: a

40. Isaiah is having his eyes checked. The doctor has put drops in Isaiah's eyes that will cause the pupils to open wide. What will happen to Isaiah's vision as the drops begin to work?
    a. His vision will start to become quite blurry.
    b. He will lose some of his colour vision.
    c. His vision will become extremely sharp and clear.
    d. Colours will appear to be "super" saturated.

    ANSWER: a

41. What happens to the pupil of the eye in dim light?
    a. It is dilated, producing a sharper image.
    b. It is dilated, producing an image that is not as sharp.
    c. It is constricted, producing an image that is not as sharp.
    d. It is constricted, producing a sharper image.

    ANSWER: b

42. Which of the following processes compensates for sensory adaptation?
    a. transduction
    b. saccades
    c. dilation
    d. lens accommodation

    ANSWER: b

43. Where is the optic disk?
    a. where the visual fields from both eyes merge
    b. where the optic nerve exits the retina
    c. immediately in front of the lens
    d. where most of the rod and cones are located

    ANSWER: b

44. What is the blind spot in the eye?
    a. where the optic nerve exits the back of the eye
    b. the point at which ganglion cells synapse with bipolar cells
    c. the area where only cones are present
    d. where photoreceptor cells do not "bleach"

    ANSWER: a

45. Petra has vision problems because of a syndrome that causes her cones to be faulty. Her rods function normally. Which of the following aspects of Petra's vision is likely to be deficient?
    a. colour vision
    b. depth perception
    c. vision in low illumination
    d. peripheral vision

    ANSWER: a

46. Imagine that biologists have discovered an animal that has eyes very similar to human eyes, but that the only receptor cells in the retina are rods; there are no cones. What would you expect about this animal's vision, based on what is known about human vision?
    a. It would be able to detect extremely fine details.
    b. It would have poor peripheral vision.
    c. It would have poor vision in low illumination.
    d. It would have no colour vision.

    ANSWER: d

47. Imagine that biologists have discovered an animal that has eyes very similar to human eyes, but that the only receptor cells in the retina are cones; there are no rods. What would you expect about this animal's vision, based on what is known about human vision?
    a. It would have poor peripheral vision.
    b. It would have poor visual acuity.
    c. It would have excellent vision in dim light.
    d. It could not see in colour.

    ANSWER: a

48. Devin has contracted a very rare eye disease that has caused damage to his rods, but for the most part, his cones have not been affected. Which of the following aspects of Devin's vision is likely to be deficient?
    a. vision in bright illumination
    b. peripheral vision
    c. colour vision
    d. detecting differences in wavelengths of light

    ANSWER: b

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Chapter 4 - Sensation and Perception

49. Which of the following techniques would allow you to maximize visual acuity at night?
    a. Close one eye.
    b. Blink your eyes several times to hasten dark adaptation.
    c. Look slightly above or below the object you wish to see.
    d. Look directly at the object you wish to see.

    ANSWER: c

50. Fifteen minutes after Zigfried left the brightly lit hallway and entered the dark passageway, what would you expect about his dark adaptation?
    a. It is still taking place in both his rods and his cones.
    b. It is complete in his rods, but still taking place in his cones.
    c. It is complete in both his rods and cones.
    d. It is complete in his cones, but still taking place in his rods.

    He came from bright to dark, cones were still working to perceive colour and detail

    ANSWER: d

51. What does the receptive field of a visual cell refer to?
    a. the portion of visual cortex that receives information from that cell
    b. a cell's degree of sensitivity or receptivity
    c. a range of wavelengths of light the cell reacts to
    d. an area of rods and cones that cause the visual cell to fire

    ANSWER: d

52. When light hits the centre-surround of a receptive field, which of the following will be stimulated?
    a. the inhibitory synapse to the visual cell
    b. the excitatory synapse to the visual cell
    c. the optic nerve
    d. the optic disc

    ANSWER: a

53. When light hits the centre of a receptive field, but does not hit the centre-surround, which of the following is most likely to occur?
    a. The associated visual cell will fire.
    b. The associated visual cell will be inhibited.
    c. The nearby visual cells will be stimulated.
    d. The optic nerve will be inhibited.

    ANSWER: a

54. When light hits the centre-surround of a receptive field, but does not hit the centre, which of the following is most likely to occur?
    a. The associated visual cell will fire.
    b. The associated visual cell will be inhibited.
    c. The nearby visual cells will be inhibited.
    d. The optic nerve will fire.

    ANSWER: b

55. What is the optic chiasm?
    a. the portion of the lateral geniculate nucleus that is responsible for coordination of sensory input
    b. the point at which the optic nerves cross over one another before projecting to the occipital lobe
    c. the portion of the visual cortex responsible for feature detection
    d. the gap between the right occipital lobe and the left occipital lobe

    ANSWER: b

56. If the pathway through your superior colliculus were not functioning correctly, what would be difficult for you to do?
    a. perceiving depth
    b. integrating visual and auditory information
    c. distinguishing colours
    d. detecting differences in texture

    ANSWER: b

57. In which of the following lobes would you find the primary visual cortex?
    a. frontal
    b. occipital
    c. temporal
    d. parietal

    ANSWER: b

58. Through which of the following brain areas do visual signals travel just before reaching primary visual cortex?
    a. frontal lobes
    b. optic disc
    c. thalamus
    d. superior colliculus

    ANSWER: c

59. Which of the following depicts an accurate pathway for neural signals leaving the retina?
    a. optic chiasm, optic nerve, occipital lobe, lateral geniculate nucleus
    b. optic nerve, optic chiasm, thalamus, primary visual cortex
    c. optic nerve, lateral geniculate nucleus, optic chiasm, occipital lobe
    d. optic chiasm, medial geniculate nucleus, primary visual cortex, thalamus

    ANSWER: b

60. What are the cells in the visual cortex that respond selectively to specific details of complex stimuli?
    a. ventral cells
    b. centre-surround detectors
    c. feature detectors
    d. ganglion cells

    ANSWER: c

61. What are the cells in the visual cortex that respond to a line of the correct width, oriented at the correct angle, and located in the correct position in its receptive field?
    a. ganglion cells
    b. binary cells
    c. complex cells
    d. simple cells

    ANSWER: d

62. What do complex cells in the visual cortex respond to?
    a. specific widths and orientation of lines anywhere in their receptive field
    b. different colours in a specific spectrum
    c. figure-ground disparity in the visual field
    d. discrepancies between the centre and centre-surround in a receptive field

    ANSWER: a

63. A microelectrode is recording the activity from a single cell in the visual cortex of a cat. The cell begins to fire rapidly when a line is presented at a 45-degree angle directly in front of the cat, but stops firing when the line is shifted to a position that is off to the left. What type of cell is likely being monitored in this case?
    a. complex cell
    b. simple cell
    c. cell in the superior colliculus
    d. ganglion cell

    ANSWER: b

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64. A microelectrode is recording the activity from a single cell in the visual cortex of a cat. The cell begins to fire rapidly when a vertical line sweeps across the visual field to the left, but stops firing when the same line sweeps back across the visual field to the right. What type of cell is likely being monitored in this case?
    a. cell in the parvocellular channel
    b. simple cell
    c. ganglion cell
    d. complex cell

    ANSWER: d

65. After visual input has been processed in the primary visual cortex, signals are processed further along a number of pathways. Which of the following types of visual information would be processed in the temporal lobe, along the ventral stream?
    a. movement
    b. brightness and contours
    c. faces
    d. complexity and contrast

    ANSWER: c

66. After visual input has been processed in the primary visual cortex, signals are processed further along a number of pathways. Where is information about object recognition processed?
    a. temporal lobes
    b. occipital lobes
    c. frontal lobes
    d. parietal lobes

    ANSWER: a

67. Where does the ventral stream project to after leaving the primary visual cortex?
    a. basal forebrain
    b. cerebellum
    c. temporal lobes
    d. parietal lobes

    ANSWER: c

68. Charley has visual agnosia and is unable to recognize common, everyday objects. Damage to which component of the visual system does this condition most likely result from?
    a. ventral stream
    b. feature detectors
    c. superior colliculus
    d. lateral geniculate nucleus

    ANSWER: a

69. Which of the following would you be unable to recognize if you had a condition known as prosopagnosia?
    a. lines with a 45-degree orientation
    b. colours
    c. movement
    d. faces

    ANSWER: d

70. In which of the following lobes would you find that brain damage leads to visual agnosia?
    a. frontal
    b. occipital
    c. temporal
    d. parietal

    ANSWER: c

71. You see a delicious-looking doughnut sitting on the counter in front of you, and you guide your hand toward the doughnut and pop it into your mouth. What do we call the second visual process for guiding your hand?
    a. Hubel vision
    b. conscious vision
    c. subcortical vision
    d. vision for action

    ANSWER: d

72. In the case study of "DF," a woman experienced brain damage as a result of carbon-monoxide poisoning and lost the ability to recognize the forms of objects. What type of deficit did "DF" have?
    a. amnesia
    b. failure of vision for action
    c. dorsal stream damage
    d. agnosia

    ANSWER: d

73. Which of the following activities would be difficult for you to do if you sustained damage to your dorsal stream?
    a. say the name of an item that you see
    b. choose colours that match
    c. recognize your best friend
    d. reach out to pick up a cup

    ANSWER: d

74. Deanne can see and recognize objects, but she seems to be unable to reach out and grasp them appropriately. She often knocks over cups and drops pencils because she doesn't orient her hand to grip them. If this problem is related to brain damage to the perceptual system, which of the following areas is most likely to be damaged?
    a. ventral stream
    b. dorsal stream
    c. primary visual cortex
    d. superior colliculus

    ANSWER: b

75. While finger painting, Imran mixed yellow paint and blue paint and ended up with green. Which mixing method did Imran use?
    a. subtractive colour mixing
    b. trichromatic mixing
    c. additive colour mixing
    d. multiplicative colour mixing

    ANSWER: a

76. If you were to shine lights of different colours onto a surface, so that the lights overlap, what type of colour mixing are you using?
    a. subtractive
    b. opponent processes
    c. additive
    d. saturation

    ANSWER: c

77. If you project a red, a green, and a blue light into space, what colour will be perceived at the point where the three lights cross?
    a. grey
    b. ultraviolet
    c. black
    d. white

    ANSWER: d

78. If you mix red, green, and blue paint, what colour will you get?
    a. orange
    b. white
    c. purple
    d. black

    ANSWER: d

79. At the musical he attended over the weekend, Andrew noticed that whenever the red and green spotlights overlapped, they seemed to change to a yellow spotlight. Which principle explains this perception?
    a. complex feature detection
    b. subtractive colour mixing
    c. additive colour mixing
    d. opponent processing of colours

    ANSWER: c

80. Television sets are able to re-create the entire visible spectrum by mixing three primary colours of light. Which theory of human colour vision is similar to this mechanism?
    a. opponent process
    b. saturation
    c. trichromatic
    d. complementary colour

    ANSWER: c

81. What differs in the visual perception of a human dichromat and a human trichromat?
    a. colour vision
    b. visual acuity
    c. dark and light adaptation
    d. peripheral vision

    ANSWER: a

82. Hering's opponent process theory suggests that receptors are linked antagonistically in pairs. What are his opposed pairs?
    a. red-yellow; blue-green; black-white
    b. yellow-green; red-blue; black-white
    c. red-green; yellow-blue; black-white
    d. red-black; yellow-white; green-blue

    ANSWER: c

83. Eli has been wearing green welding goggles for the past 30 minutes. Based on the opponent process theory of colour vision, what colour will white objects appear to be for a brief time after Eli takes off the green goggles?
    a. blue
    b. yellow
    c. orange
    d. red

    ANSWER: d

84. According to one theory of colour vision, colours are signalled in pairs by neurons that fire faster to one colour and slower to another colour. What is this theory called?
    a. trichromatic theory
    b. dichromatic theory
    c. opponent process theory
    d. complementary colour theory

    ANSWER: c

85. Denise was momentarily blinded when paparazzi snapped her picture using a blue flash. Following the flash, she saw spots for several minutes. What colour were the spots, based on the opponent process theory of colour vision?
    a. yellow
    b. blue
    c. red
    d. green

    ANSWER: a

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86. After having your picture taken with a yellow flash, you momentarily see blue spots floating before your eyes. Which process best explains this phenomenon?
    a. additive colour mixing
    b. trichromatic theory
    c. opponent process theory
    d. subtractive colour mixing

    ANSWER: c

87. Which theory of colour vision is supported by the action of the lateral geniculate nucleus?
    a. Helmholtz'
    b. trichromatic
    c. opponent process
    d. Weber's

    ANSWER: c

88. Which of the following is the best description of the current view of how colour is coded in the visual system?
    a. It starts as an opponent process and then switches to a trichromatic process.
    b. It starts with rods and then switches to cones.
    c. It begins with cones and then switches to rods.
    d. It begins with a trichromatic process and then switches to an opponent process.

    ANSWER: d

89. Three groups of students completed the same test, but each group's tests had a different coloured cover. Based on research results by Andrew Elliot and his colleagues, which group should have the lowest average score on the test?
    a. the group with black tests
    b. the group with red tests
    c. the group with green tests
    d. the group with white tests

    ANSWER: b

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90. Which of the following concepts helps to explain why three people could look at the same sketch and report seeing three different things?
    a. sensory readiness
    b. perceptual set
    c. cognitive interpretation
    d. stimulus ambiguity

    ANSWER: b

91. What do we mean when we say that perception is influenced by a perceptual set?
    a. The brain is only capable of perceiving so many things.
    b. People often perceive what they expect to perceive.
    c. Perception is based on detection of specific features.
    d. Perception is less about the person and more about the situation.

    ANSWER: b

92. Mike and Sandy were walking down the street, and Mike was telling Sandy a story about a party he went to. As they were walking, a car full of clowns drove past and waved at them. Sandy waved back. Later, Mike reported truthfully that he had never seen the clowns and did not notice that Sandy waved at them. Which of the following could explain this apparent lapse in perception?
    a. inattentional blindness
    b. bottom-up processing
    c. hyperfocus
    d. phi phenomenon

    ANSWER: a

93. Feature analysis assumes that we progress from individual elements to the whole in the formation of our perceptions. Which of the following processes describes feature analysis?
    a. bottom-up
    b. perceptual set
    c. subjective processing
    d. top-down

    ANSWER: a

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94. Vanessa describes a new melody that she heard at a concert by telling you each of the individual notes in the order that they were played. In providing this type of description, which type of processing does Vanessa appear to use?
    a. opponent process
    b. bottom-up
    c. figure-ground
    d. top-down

    ANSWER: b

95. Sima was listening to a tape recording of a famous speech that was being played backward. She just heard gibberish until a classmate told her that the phrase "meet me in St. Louis" was clearly spoken. The tape was rewound and as Sima listened she clearly heard the phrase this time. Which of the following models of perception is illustrated by Sima's ability to detect the phrase the second time through the tape?
    a. Gestalt
    b. bottom-up processing
    c. top-down processing
    d. opponent process

    ANSWER: c

96. Which type of processing is most important for the ability to rapidly process words that you are reading?
    a. lateral
    b. bottom-up
    c. top-down
    d. feature analysis

    ANSWER: c

97. Tracy has terrible handwriting, and many of her individual characters are tough to tell apart, but her roommate is able to read her notes just fine. Which of the following types of processing allows Tracy's roommate to read the notes?
    a. feature analysis
    b. opponent processing
    c. bottom-up processing
    d. top-down processing

    ANSWER: d

98. Which of the following is an example of the phi phenomenon?
    a. mixing of coloured lights to produce different colours
    b. flashing lights that produce the illusion of movement
    c. drawing a two-dimensional image that shows depth
    d. seeing a reversible figure differently after priming

    ANSWER: b

99. The lights around the movie marquee flashed on and off in succession. However, Jerome did not perceive them as separate lights flashing, but instead saw a continuous band of light moving around the edge of the marquee. What is this type of perception known as?
    a. phi phenomenon
    b. perceptual set
    c. feature detection
    d. bottom-up processing

    ANSWER: a

100. Shelby created an animated scene using her computer. She drew a frog as he started to jump, and then drew the frog landing. The computer created 10 pictures between these two points, each of which adjusted the frog's position very slightly. When the entire sequence of 12 pictures is displayed in rapid succession, the frog appears to hop smoothly. Which of the following leads to this perception of animation?
    a. phi phenomenon
    b. perceptual set
    c. bottom-up processing
    d. feature detection

    ANSWER: a

101. Why is it difficult to see a chameleon that has blended in with its background?
    a. Perceptually, the chameleon and the background share a common fate.
    b. The illusion of relative size leads us to think that the chameleon has disappeared.
    c. We cannot easily distinguish between figure and ground in this case.
    d. The perceptual principle of shape constancy prevents us from seeing the chameleon.

    ANSWER: c

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102. Zachary is looking at a reversible figure that first appears to be a vase and then appears to be two faces. His perception of the figure keeps switching between these two interpretations. What causes the switch in perception?
    a. The Gestalt principle of simplicity doesn't work for reversible figures.
    b. The figure-ground distinction in reversible figures is often ambiguous.
    c. The Gestalt principles of proximity and closure are both at work in reversible figures.
    d. Reversible figures cause people to experience the phi phenomenon.

    ANSWER: b

103. What becomes inverted in paintings or drawings that lead to ambiguous interpretations?
    a. open processing and closed processing
    b. figure and ground
    c. sensation and perception
    d. top and bottom

    ANSWER: b

104. What does the Gestalt principle of proximity state?
    a. Figure and ground can be ambiguous.
    b. Objects nearer to each other are seen as forming a unit.
    c. Bottom-up processing is more likely with close items.
    d. Centre-surround cells that are closer fire more often.

    ANSWER: b

105. Natalie looked out her apartment window at the traffic jam below. There was very little space between the front of one car and the rear of the next, but there were wide spaces between the side of one car and the side of another car. Which of the following Gestalt principles explains why Natalie saw several rows of cars, rather than a cluster of cars?
    a. proximity
    b. simplicity
    c. similarity
    d. closure

    ANSWER: a

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106. During the halftime show of the football game, the cheerleaders did a routine where they used red and blue pompoms. At one point, they held all of their pompoms in a pattern so that the blue ones formed the shape of the team's logo. Which Gestalt principle is illustrated in this example?
    a. closure
    b. proximity
    c. similarity
    d. simplicity

    ANSWER: c

107. Because of which Gestalt principle do we often perceive a series of dots on a printed form as a "solid" line?
    a. constancy
    b. closure
    c. symmetry
    d. similarity

    ANSWER: b

108. When Justin looked up at the night sky, he perceived the three stars that make up the belt in the constellation Orion as a line, rather than as individual stars. Which Gestalt principle does Justin's perception of the night sky illustrate?
    a. figure-ground
    b. similarity
    c. closure
    d. proximity

    ANSWER: c

109. Christina was skiing down a hill when the trail broke into two separate trails. One trail turned off at sharp angle and looked to Christina like a new trail; the second trail appeared to be the same trail that she had been on. Which Gestalt principle is illustrated by this example?
    a. continuity
    b. similarity
    c. proximity
    d. commonality

    ANSWER: a

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110. You are looking at a book. What type of stimulus is the book, from a perceptual perspective?
    a. sensory
    b. Gestalt
    c. distal
    d. proximal

    ANSWER: c

111. You interpret a trapezoid shape projected on your retina as a rectangular book. What have you just formulated?
    a. perceptual set
    b. psychophysical law
    c. perceptual hypothesis
    d. Gestalt principle

    ANSWER: c

112. The disparity between the images on the left and right retinas is used for depth perception. If there is greater disparity for the left and right images of your coffee cup, and less disparity for the left and right images of your pen, then which of the following is true?
    a. Your cup is closer to your right eye.
    b. Your cup is closer to your left eye.
    c. Your cup is closer than your pen.
    d. Your pen is closer than your cup.

    ANSWER: c

113. Stacia has lost all of her vision in her left eye. What will happen to Stacia's perceptual abilities?
    a. She will lose her ability to perceive colours accurately.
    b. She will be more vulnerable to perceptual illusions that incorporate differences in relative line length.
    c. She will no longer be able to utilize convergence as a perceptual cue.
    d. She will be unable to perceive depth.

    ANSWER: c

114. Which depth cue relies on information about the position of your eyes?
    a. relative size
    b. binocular disparity
    c. accommodation
    d. convergence

    ANSWER: d

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115. What increases as you keep focusing on your finger as it moves closer to your face?
    a. depth perception
    b. acuity
    c. convergence
    d. motion parallax

    ANSWER: c

116. As Briana drove down the highway, the pickets of the fences moved past her in a blur, but the mountains in the distance didn't appear to move at all. What was Briana experiencing?
    a. binocular cue for depth called retinal disparity
    b. monocular cue for depth called motion parallax
    c. binocular cue for depth called convergence
    d. pictorial cue for depth called texture gradient

    ANSWER: b

117. Tran was painting a picture of a jet on a runway; however, in his painting, the sides of the runway are parallel to each other. His picture seems to lack depth. Which monocular depth cue has Tran failed to make use of?
    a. linear perspective
    b. convergence
    c. motion parallax
    d. height in plane

    ANSWER: a

118. The sand at Zane's feet appeared coarse, and he could see the individual grains of sand. However, the sand down the beach appeared to blur together. Which depth cue is most prominent in this example?
    a. relative size
    b. interposition
    c. texture gradient
    d. light and shadow

    ANSWER: c

119. What is interposition?
    a. a lens's ability to change shape and focus light directly on the retina
    b. the processing of auditory information at the cochlear level
    c. an environmental depth cue in which closer objects overlap objects farther away
    d. the relationship between bipolar and ganglion cells

    ANSWER: c

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120. Gabriella was looking for shelter from the sudden cloudburst, and at first she had difficulty judging whether the old barn or the farmhouse was closer. When she noticed that the barn partially obscured the corner of the house, she headed for the barn. Which depth cue did Gabriella use?
    a. linear perspective
    b. texture gradient
    c. relative size
    d. interposition

    ANSWER: d

121. Images that occupy more space on your retina are seen as nearer, relative to images that occupy less space. What is this depth cue called?
    a. interposition
    b. retinal disparity
    c. relative size
    d. accommodation

    ANSWER: c

122. Ashley is trying to create a small model village on the mantle of her fireplace. She bought three-inch-high figures to put at the front of the mantle and smaller figures to put near the back that will appear to be very far away. What depth cue is Ashley using?
    a. interposition
    b. texture gradient
    c. convergence
    d. relative size

    ANSWER: d

123. Which of the following is implied by the phenomenon of perceptual constancy?
    a. Movement of an object can disrupt our ability to perceive it.
    b. Two objects may be perceived as being the same even though they produce different retinal images.
    c. We have an easier time remembering items that have remained constant, compared to objects that have changed.
    d. Our ability to perceive changes in an object is inhibited if we have been exposed to that object for an extended period of time.

    ANSWER: b

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124. As I walk closer to my friend, she perceives that I am the same person even though the image on her retina changes as I move. Which of the following terms is used for this perceptual ability?
    a. object permanence
    b. perceptual constancy
    c. accommodation
    d. binocular depth perception

    ANSWER: b

125. Three-year-old Keeghan was flying in a plane for the first time. As the plane descended for its landing, Keeghan became very excited because he saw all the buildings and cars get bigger and bigger. He asked his father how big the houses would grow. Which aspect of perception FAILED in this example?
    a. accommodation
    b. perceptual constancy
    c. linear perspective
    d. binocular depth cues

    ANSWER: b

126. Which visual illusion accounts for the fact that the corner of a building thrust toward the viewer looks shorter than an inside corner thrust away from the viewer?
    a. Ponzo illusion
    b. illusion of relative size
    c. Müller-Lyer illusion
    d. horizontal-vertical illusion

    ANSWER: c

127. In the Ames room, people are seen to get smaller or larger as they move about. What does this demonstrate about our perception?
    a. The proximal stimulus is unrelated to the distal stimulus.
    b. The actual distal stimuli are the primary determinants of perception.
    c. Perception depends on the assumptions we make about stimuli.
    d. Bottom-up processing controls most perception.

    ANSWER: c

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128. What is the moon illusion?
    a. We perceive the moon to be perfectly round, when it is really elliptical.
    b. We perceive the moon to be dimmer in some seasons than in others.
    c. We perceive the moon to be larger on the horizon than overhead.
    d. We think we see the moon when in fact it is not there.

    ANSWER: c

129. Which of the following is true of optical illusions?
    a. They are influenced by our experiences.
    b. They are perceived only if your vision is compromised.
    c. Once you understand the "trick," then you won't see the illusion anymore.
    d. They are more pronounced in children.

    ANSWER: a

130. Which perception is associated with the amplitude of a sound wave?
    a. loudness
    b. richness
    c. timbre
    d. tonal quality

    ANSWER: a

131. What aspect of the sound wave influences the perception of timbre?
    a. panache
    b. amplitude
    c. pitch
    d. purity

    ANSWER: d

132. When a clarinet plays a high C followed by a low C, these two notes are perceived differently because they differ in what aspect?
    a. complexity
    b. amplitude
    c. frequency
    d. purity

    ANSWER: c

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133. What units of measurement refer to the loudness of sounds?
    a. timbre
    b. wavelength
    c. decibels
    d. hertz

    ANSWER: c

134. What units of measurement refer to the pitch of sounds?
    a. hertz
    b. nanometers
    c. decibels
    d. wavelengths

    ANSWER: a

135. What is the range of human hearing?
    a. 5 to 50 Hz
    b. 10 to 100 Hz
    c. 20 to 20 000 Hz
    d. 10 000 to 100 000 Hz

    ANSWER: c

136. What is the structure of the ear that transduces sound vibrations into nerve impulses?
    a. oval window
    b. temporal lobe
    c. cochlea
    d. stirrup

    ANSWER: c

137. Jefferson has had years of exposure to high-amplitude sound through his work as a helicopter mechanic. Lately he has noticed that he is losing his ability to detect high-frequency sounds. What has Jefferson most likely damaged?
    a. his eardrum
    b. the tiny bones of his middle ear
    c. his cochlea
    d. his auditory canal

    ANSWER: c

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138. Which structure of the ear serves a similar function as the retina serves in the eye?
    a. pinna
    b. eardrum
    c. cochlea
    d. ossicles

    ANSWER: c

139. What are the direct receptors for hearing?
    a. hair cells
    b. basilar cells
    c. ossicles
    d. cochleas

    ANSWER: a

140. What process allows us to hear pitch, according to place theory?
    a. There is differential movement of specific ossicles.
    b. The entire cochlea vibrates at a speed equivalent to the wavelengths that stimulate the ear.
    c. Vibrations occur at specific locations on the basilar membrane.
    d. Specific hair cells are simultaneously stimulated all along the length of the semicircular canals.

    ANSWER: c

141. Imagine that the basilar membrane in the human ear were longer. What might you expect humans to be able to do, based on place theory?
    a. localize sounds more accurately
    b. hear more sounds of lower frequency, but lose some higher frequency sounds
    c. hear a wider range of sounds
    d. detect sound waves that had a lower amplitude

    ANSWER: c

142. Which theory of hearing views the basilar membrane as being like a drumhead?
    a. place
    b. timpani
    c. opponent process
    d. frequency

    ANSWER: d

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143. The maximum firing rate for individual neurons is 1,000 neural impulses per second. What does this biological limitation mean for theories of perception?
    a. Trichromatic theory cannot fully explain colour perception.
    b. Opponent process theory cannot fully explain colour perception.
    c. Place theory cannot fully explain pitch perception.
    d. Frequency theory cannot fully explain pitch perception.

    ANSWER: d

144. What is the major flaw in the frequency theory of pitch perception?
    a. It places the transduction process in the semicircular canals and not the cochlea.
    b. Structurally, it is impossible for the basilar membrane to vibrate.
    c. The action of the ossicles interacting with the auditory nerve was misidentified.
    d. Neurons cannot fire fast enough to account for hearing tones higher than 1,000 cycles/second.

    ANSWER: d

145. Which theory, or theories, best explain(s) pitch perception for very low-pitch, very high-pitch, and middle-pitch sounds, respectively?
    a. place theory; both theories; frequency theory
    b. place theory; frequency theory; place theory
    c. frequency theory; place theory; both theories
    d. frequency theory; both theories; place theory

    ANSWER: c

146. What is speech prosody?
    a. ability to use speech for intentional communication
    b. unspoken aspects of speech, including body posture
    c. use of speech in noncommunicative ways
    d. musical aspects of speech, like intonation and rhythm

    ANSWER: d

147. After reading the Featured Study, in which of the following might you enroll your child if you wanted to enhance your child's ability to interpret speech prosody?
    a. team sport rather than an individual sport
    b. linguistics course
    c. visual arts course
    d. keyboard lessons

    ANSWER: d

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148. If you are experiencing gustatory perception, what are you doing?
    a. tasting
    b. smelling
    c. touching
    d. balancing

    ANSWER: a

149. What are the four basic tastes generally considered to be?
    a. sweet, sour, spicy, and smooth
    b. salty, sweet, sour, and bitter
    c. bitter, salty, bland, and sour
    d. sour, bitter, bland, and hot

    ANSWER: b

150. Where on the tongue would you find the oldest taste cells?
    a. near the tip of the tongue
    b. near the middle of the taste bud
    c. near the throat
    d. near the outer edge of the taste bud

    ANSWER: b

151. What structure in the gustatory system operates in a similar fashion to rods and cones in the visual system?
    a. the tongue
    b. a taste bud
    c. a hair cell
    d. the salivary gland

    ANSWER: b

152. What evidence do we have that some taste preferences are innate?
    a. There is genetic evidence of predispositions to prefer certain foods.
    b. There are many foods or substances that are rejected by all cultures.
    c. Newborn infants demonstrate a preference for sweet and an aversion to sour tastes.
    d. The brain's response to flavours does not change across the life span, even if diet changes.

    ANSWER: c

Chapter 4 - Sensation and Perception

153. Compared to nontasters, what is different about people characterized as supertasters?
    a. They have taste buds that respond to multiple types of flavours.
    b. They have three or four additional types of taste buds.
    c. They have about four times as many taste buds per square centimetre.
    d. They have about ten times as many taste buds per square centimetre.

    ANSWER: c

154. What is one key gender difference that has been found with respect to tasting?
    a. Men are more likely than women to be supertasters.
    b. Women tend to react more to sweet tastes while men react more to bitter tastes.
    c. Women are more likely than men to be supertasters.
    d. Men tend to react more to sweet tastes while women react more to bitter tastes.

    ANSWER: c

155. Eloise is an individual who is classified as a supertaster. What is she likely to be especially sensitive to?
    a. salty and sour tastes
    b. sweet and salty tastes
    c. sweet and bitter tastes
    d. sour and bitter tastes

    ANSWER: c

156. Why does food generally taste bland when you have a severe head cold?
    a. Your cold will cause the sweet receptors in your mouth to become inactivated.
    b. Your high temperature will cause your brain to block signals from the taste buds in the mouth.
    c. Your naturally produced antibodies interfere with chemical molecules stimulated by your taste buds.
    d. Flavour is influenced by smell as well as taste, and with a reduced sense of smell, your sense of taste will be diminished.

    ANSWER: d

157. Mike broke his nose in a recent boxing match. The doctors packed his nose and told him he will need to breathe through his mouth for the next 10 to 14 days. What is Mike likely to experience while his nose is packed?
    a. Food will have little taste because much of a food's flavour depends on our sense of smell.
    b. He will have problems with his equilibrium and balance.
    c. Food will taste better because his sense of taste will be temporarily enhanced to compensate for his missing sense of smell.
    d. He will have blurry vision because the packing will put pressure on his optic nerve.

    ANSWER: a

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Chapter 4 - Sensation and Perception

158. What is the sense associated with the perception of smell?
    a. olfaction
    b. gustation
    c. audition
    d. kinaesthesia

    ANSWER: a

159. What is the only sensory system that does not project upward to the cerebral cortex through the thalamus?
    a. audition
    b. gustation
    c. vision
    d. olfaction

    ANSWER: d

160. What are the sensory receptors for smell?
    a. smell buds
    b. gustatory bulbs
    c. olfactory cilia
    d. sciatic receptors

    ANSWER: c

161. Our sense of smell shows evidence of sensory adaptation. What happens to the perceived strength of an odour?
    a. It fades to less than half its original strength within about four minutes.
    b. It slowly increases over time, reaching a maximum in about 15 minutes.
    c. It fades to less than half its original strength within a few seconds.
    d. It increases to more than twice its original strength within about four minutes.

    ANSWER: a

162. If someone's behaviour is altered by the scent chemicals released by another member of his species, what is the term used for that scent chemical?
    a. scent hormone
    b. pheromone
    c. odourant
    d. chemolfaction

    ANSWER: b

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Chapter 4 - Sensation and Perception

163. What happens to the perception of pressure if a stimulus is applied continuously to a specific spot on the skin?
    a. It fades in some receptive fields, but increases in others.
    b. It increases over time.
    c. It gradually fades.
    d. It fades only if the pressure is pulsatile.

    ANSWER: c

164. What route is taken by nerve fibres that carry information about pressure from the surface of the skin on the left side of the body?
    a. past the spinal column and into the left temporal cortex
    b. along the spinal meninges and terminating in the left parietal somatosensory cortex
    c. through the spinal column and into the right frontal motor cortex
    d. through the spinal column and into the right parietal somatosensory cortex

    ANSWER: d

165. Which pain pathway transmits information about an injury that has just occurred?
    a. fast
    b. geniculate
    c. slow
    d. medial

    ANSWER: a

166. Which pathway for pain results in the experience of pain being less localized and longer lasting?
    a. endorphin
    b. generic
    c. slow
    d. thalamic

    ANSWER: c

167. What structures do neural transmission in the slow pain pathway depend on?
    a. pulsating neural impulses called pain spindles
    b. opponent process receptors in the area surrounding the injury
    c. thicker, myelinated neurons called A-delta fibres
    d. thin, unmyelinated neurons called C fibres

    ANSWER: d

Chapter 4 - Sensation and Perception

168. Catelin has had a slow throbbing pain in her ankle since she twisted it while in-line skating last week. Where are these pain signals travelling?
    a. along thin, unmyelinated C fibres
    b. through periacqueductal gray neurons in the midbrain
    c. along ungated endorphin pathways in the hypothalamus
    d. through thick, myelinated A-delta fibres

    ANSWER: a

169. Derek dropped a hammer on his foot and shrieked a split second later at the intense pain from a newly broken toe. How did the almost instantaneous pain signals travel?
    a. along thick, myelinated A-delta fibres
    b. through periacqueductal gray neurons in the midbrain
    c. along thin, unmyelinated C fibres
    d. through gated endorphin pathways in the hypothalamus

    ANSWER: a

170. Which of the following accurately describes the role of culture for pain perception?
    a. Race has a larger impact on pain perception than does culture.
    b. Culture has no impact on pain perception or attitudes toward pain.
    c. Culture affects willingness to tolerate pain, but not the process of pain perception.
    d. Cultural rules dictate the amount of pain experienced, but only above a certain innate threshold.

    ANSWER: c

171. Which theory can account for the fact that people suffering from pain sometimes report pain relief from a sugar pill placebo?
    a. cognitive control
    b. sensory adaptation
    c. perceptual constancy
    d. gate control

    ANSWER: d

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Chapter 4 - Sensation and Perception

172. Which of the following helps to explain an athlete's ability to play with a broken foot and not feel the pain until much later?
    a. overactive thyroid response
    b. hypnotic induction control theory of pain
    c. sympathetic nervous system control mechanisms
    d. gate-control theory of pain

    ANSWER: d

173. What is the point of origin for the pathway that researchers believe mediates the perception of pain?
    a. medial forebrain bundle
    b. medulla
    c. periacqueductal gray
    d. septal nucleus

    ANSWER: c

174. What would happen if you cut fibres in the neural pathway leading away from the periacqueductal gray in the midbrain?
    a. increased perception of pain
    b. enhanced effects of morphine and other opiate drugs
    c. release of endorphins
    d. reduced perception of pain

    ANSWER: a

175. What is the role of glial cells for pain perception?
    a. If spinal glial cells are activated, they can reduce the experience of pain.
    b. If glial cells are damaged or inactive, perception of pain increases.
    c. Glial cells in the spinal cord appear to block transmission of endorphins to the periaqueductal grey.
    d. Spinal glial cells are activated by the immune system and may amplify chronic pain.

    ANSWER: d

176. Which sense is important for perception of the positions of the various parts of the body?
    a. homeostatic
    b. vestibular
    c. kinesthetic
    d. kinetic

    ANSWER: c

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Chapter 4 - Sensation and Perception

177. What does your kinesthetic system allow you to perceive?
    a. your sense of forward acceleration
    b. your body movement, when something else is moving you
    c. the relative position of your body parts
    d. the location of your body in space

    ANSWER: c

178. Where would you find receptors for the kinesthetic sense?
    a. semicircular canals
    b. basilar membrane
    c. cochlea
    d. joints and muscles

    ANSWER: d

179. A police officer asks Stanley to close his eyes and touch the tip of his nose, using first his right index finger and then his left index finger. What does Stanley rely on to complete this test of coordination?
    a. sensory accommodation
    b. reticular sense
    c. vestibular sense
    d. kinesthetic sense

    ANSWER: d

180. Where are the receptors for the vestibular sense?
    a. muscles
    b. inner ear
    c. joints
    d. skin

    ANSWER: b

181. Which of the following parts of the ear has a role in maintaining balance?
    a. semicircular canals
    b. basilar membrane
    c. ossicles
    d. cochlea

    ANSWER: a

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Chapter 4 - Sensation and Perception

182. Loreen has a bad case of vertigo. She feels like the room is spinning, and she has trouble keeping her balance. Which of the following is most likely to be the location of excess neural activity in Loreen's case?
    a. olfactory bulb
    b. parvocellular system
    c. periacqueductal gray
    d. semicircular canals

    ANSWER: d

183. You have a severe ear infection. Which of the following is a potential side effect?
    a. enhanced sense of smell
    b. loss of balance
    c. blurred vision
    d. loss of ability to taste food

    ANSWER: b

184. Our construction of perceptual hypotheses illustrates which of your text's unifying themes?
    a. Psychology is empirical.
    b. Behaviour is determined by multiple causes.
    c. Psychology evolves in a sociohistorical context.
    d. People's experience of the world is highly subjective.

    ANSWER: d

185. Which of your text's unifying themes is illustrated by the fact that many people are reluctant to try novel foods from other cultures?
    a. People's experience of the world is highly subjective.
    b. Psychology is empirical.
    c. Behaviour is shaped by our cultural heritage.
    d. Psychology evolves in a sociohistorical context.

    ANSWER: c

186. What depth cues must a painter employ in order to create the illusion of three-dimensional reality?
    a. pictorial
    b. convergence
    c. binocular
    d. pointillism

    ANSWER: a

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Chapter 4 - Sensation and Perception

187. Which type of artists were more concerned with interpreting a viewer's fleeting perception of reality than with re-creating the photographic "reality" of a scene?
    a. French Impressionists
    b. realists
    c. medievalists
    d. cubists

    ANSWER: a

188. Which mechanism does the impressionist technique of pointillism rely on?
    a. subtractive colour mixing
    b. feature analysis
    c. binocular disparity as a cue for depth
    d. additive colour mixing

    ANSWER: d

189. Which school of painting reduces reality to combinations of geometric forms laid out in a flat space?
    a. cubism
    b. surrealism
    c. Impressionism
    d. pointillism

    ANSWER: a

190. Which organizational principles are evident in the paintings of Cubists?
    a. Gestalt
    b. accommodation
    c. functionalist
    d. neurological

    ANSWER: a

191. Which theorist's influence is reflected in the surrealists' exploration of the world of dreams and fantasy?
    a. Ernst Weber
    b. David Hubel
    c. Sigmund Freud
    d. Gustav Fechner

    ANSWER: c

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Chapter 4 - Sensation and Perception

192. What are M. C. Escher's paintings, which often include impossible staircases and other structures, viewed as examples of?
    a. perceptual ambiguity
    b. pointillism
    c. cubism
    d. Gestalt continuity

    ANSWER: a

193. Victor Vasarely's approach is known as Kinetic Art. How does he use optical illusions in his work?
    a. He makes it seem as if there are three-dimensional images popping out of a background of arbitrary features.
    b. He hides images of nudes within advertising images.
    c. He makes it appear as if geometric shapes are moving or changing shape.
    d. He creates a complex image from tiny points of paint or charcoal.

    ANSWER: c

194. Belgian artist René Magritte used images of paintings on easels (within his paintings) that appeared to continue beyond the borders of the canvas. What point was he trying to make?
    a. By making his images look ridiculous, he challenged the viewer to react against surrealist trends in art.
    b. He used visual illusions to make political statements about the futility of democracy.
    c. There is no line between the "real world" and the illusory world, or that everything is an illusion.
    d. He created impossible figures, like Escher did, in order to demonstrate that it was impossible to separate art from the artist.

    ANSWER: c

195. What does the door-in-the-face technique involve?
    a. Making a long series of very small requests, until the target stops agreeing.
    b. Concealing some of the costs associated with a request until after the request has been accepted.
    c. Making a very large request that is likely to be turned down to increase the chances that people will agree to a smaller request later.
    d. Adding incentives to a request that has been turned down until people finally agree to go along with the initial request.

    ANSWER: c

196. Last year Fiona had a yard sale. She marked the prices of items very reasonably, and she refused to reduce them when people tried to negotiate. This year she had another yard sale, but this time she marked the prices of items quite high, and then reduced them by 50 percent or more when people asked to negotiate. Fiona was surprised to find that she made much more money this year. Which of the following may have led people to purchase a lot from Fiona's sale this year?
    a. contrast effects
    b. absolute thresholds
    c. sensory adaptation
    d. subliminal comparitors

    ANSWER: a

197. Roberta and Phil have been arrested for vandalism at their school. Given what we know about contrast effects, what should their defence attorney emphasize in order to get a lighter sentence for Roberta and Phil?
    a. The other students involved in the incident did much more damage than her clients did.
    b. Her clients are both active in a number of extracurricular activities at their school.
    c. This is the first offence.
    d. Both clients are good students who always score at the top of their class.

    ANSWER: a

    Darcy

    Darcy is studying at the kitchen table. Her brothers are watching the hockey game in the living room. When Darcy first sat down to study, the noise of the game was distracting, but now she doesn't really notice it at all. As she reads through her notes, Darcy also doesn't seem to notice all the little spelling errors she made when she was writing them down in class. Instead, she reads the words and sentences clearly and is able to focus on the concepts and examples rather than her mistakes. After a while, Darcy reaches out and grabs her water glass and takes a drink. Just then, her brothers started yelling when their team scores. Startled, Darcy dropped the glass onto her baby toe, which sends pain shooting up her leg. Although Darcy is momentarily distracted, she goes back to her books and is focused on her studies again within about 20 minutes.

198. Which process allows Darcy to not be distracted by the hockey game?
    a. Gestalt continuation
    b. neural fatigue
    c. sensory adaptation
    d. selective attention

    ANSWER: c

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199. Which perceptual process allows Darcy to read her notes without noticing small errors?
    a. linguistic adaptation
    b. bottom-up processing
    c. top-down processing
    d. sensory adaptation

    ANSWER: c

200. Which of the following brain areas is critical when Darcy reaches out for her water glass?
    a. dorsal stream
    b. primary visual cortex
    c. periaqueductal gray
    d. temporal lobe

    ANSWER: a

201. Which of the following increases led to Darcy being startled when Darcy's brothers started yelling?
    a. frequency of the sound
    b. amplitude of the sound
    c. purity of the sound
    d. timbre of the sound

    ANSWER: b

202. Which type of nerve fibres were responsible for the immediate sensation when Darcy felt pain in her baby toe?
    a. C fibres
    b. A-delta fibres
    c. ungated thalamic fibres
    d. periaqueductal fibres

    ANSWER: b

203. Complete the following analogy: The visual cortex is to the auditory cortex as the occipital lobe is to the _____.
    a. frontal lobe
    b. sensory lobe
    c. parietal lobe
    d. temporal lobe

    ANSWER: d

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Chapter 4 - Sensation and Perception

204. You've been sitting on the couch for a while now; there is music playing in the background, and your cat has fallen asleep with his head on your arm. You are daydreaming about your upcoming vacation, and you don't notice or attend to the sound of the music or the pressure of your cat's very heavy head. What processes result in these two types of loss of feeling?
    a. endorphin-induced suppression of perception
    b. sensory adaptation
    c. sensory sensitization
    d. perceptual dulling

    ANSWER: b

205. Complete the following analogy: Hue is to pitch as brightness is to _____.
    a. purity
    b. loudness
    c. retinal disparity
    d. timbre

    ANSWER: b

206. Use appropriate examples from everyday situations to illustrate the basic concepts from signal-detection theory, and how signal-detection accuracy can vary across situations.

    ANSWER: Good answers to this question should include practical examples of a hit, a miss, a correct rejection, and a false alarm. The discussion should also include the idea that changing the criterion for detection can alter accuracy. Well-developed answers will also include the idea that concurrent environmental events (such as irrelevant stimuli) can affect sensory thresholds and the accuracy of signal detection.

207. From a distal light source to the brain, sequentially trace a visual stimulus through the eye and nervous system.

    ANSWER: Light passes through the cornea, enters the pupil, is focused by the lens, and is projected onto the retina. The retina converts the light rays into nerve impulses, which then travel via the optic nerve to the optic chiasm. At the optic chiasm, the axons from the inside half of each eye cross over and project along two divergent pathways to the opposite cerebral hemisphere.

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Chapter 4 - Sensation and Perception

208. Provide an overview of the trichromatic and opponent process theories of colour vision, and resolve the "debate" between the two.

ANSWER: The trichromatic theory proposes that the eye has three types of receptors, each responsive to one of the three primary colours of light: red, blue, and green. The eye then additively mixes different proportions of these three colours to produce the colours we see. The opponent process theory proposes that colour is signalled in pairs by receptors that fire faster to one colour and slower to a second, complementary colour. The three pairs of opponent colours are red-green, blue-yellow, and black-white.

Both theories are needed to adequately explain colour vision. In the earliest stage of information processing, there are three types of cones, each responsive to a different band of wavelengths, consistent with trichromatic theory. In later stages, cells in the retina, the lateral geniculate nucleus, and the visual cortex respond in opposite ways to complementary colours. Thus, colour coding begins with a trichromatic process and then switches to an opponent process.

209. Provide an overview of the place and frequency theories of pitch perception, and resolve the "debate" between the two.

ANSWER: Place theory proposes that specific sound frequencies vibrate specific portions of the basilar membrane, producing different pitches. Frequency theory, on the other hand, proposes that pitch perception corresponds to the frequency at which the entire basilar membrane vibrates.

Currently, it is believed that both theories are needed to fully account for pitch perception. It appears that, for low-frequency sounds (under 1000 Hz), pitch perception depends on frequency coding only; for moderate-frequency sounds (1000 Hz to 5000 Hz), pitch perception depends on a combination of place and frequency coding; for high-frequency sounds (over 5000 Hz), pitch perception depends on place coding only.

210. Compare vision and hearing with regard to the proximal stimulus and information processing for each sense.

ANSWER: The proximal stimulus for vision is light waves oscillating over distance. Light waves have three properties: (1) amplitude, affecting the perception of brightness; (2) wavelength, affecting the perception of colour; and (3) purity, affecting the perception of saturation. Similarly, the proximal stimulus for hearing is sound waves oscillating over time. Sound waves have the same three properties as light waves: (1) amplitude, affecting the perception of loudness; (2) wavelength, affecting the perception of pitch; and (3) purity, affecting the perception of timbre.

Both the eye and the ear convert physical energy (light and sound waves, respectively) into the neural energy that travels to the brain, producing sensory experience. In the eye, this conversion is done by the rods and cones at the retina; in the ear, this conversion is done by the hair cells, located on the basilar membrane in the inner ear. Visual information is routed to the visual cortex in the occipital lobes; auditory information is routed to the auditory cortex in the temporal lobes.

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Chapter 4 - Sensation and Perception

211. Using appropriate examples, show how perceptual experiences can be subjective.

ANSWER: Good answers to this question should include ideas such as (1) expectations can affect the perception of visual or auditory stimuli; (2) pain perception can be altered by shifts in attentional focus; and (3) extreme comparitors and contrast effects can affect perception. Well-developed answers will bring in concepts from across the chapter, including the Personal Application and the Critical Thinking Application.