

Chapter 1: Introduction to Psychopharmacology

Test Bank

Multiple Choice

1. Which of the following fields are encompassed in psychopharmacology?

- a. Psychology and pharmacology
- b. Psychology and sociology
- c. Biology and sociology
- d. Pharmacy and pharmacology

Ans: A

Answer Location: Psychopharmacology

Learning Objective: Psychopharmacology

Cognitive Domain: Knowledge

Difficulty Level: Easy

2. Which of the following describes a psychoactive drug?

- a. John feels better after rubbing an oral gel on his sore tooth.
- b. John's headache pain is gone after taking a pain-relieving drug.
- c. John feels less depressed after taking his antidepressant medication.
- d. None of these answers describes a psychoactive drug.

Ans: C

Answer Location: Psychopharmacology

Learning Objective: Psychopharmacology

Cognitive Domain: Application

Difficulty Level: Medium

3. Drugs used to treat disorders are referred to as:

- a. pharmacotherapeutic drugs.
- b. psychoactive drugs.
- c. alternative medicines.

d. recreational drugs.

Ans: A

Answer Location: Why read a book on psychopharmacology?

Learning Objective: Psychopharmacology

Cognitive Domain: Knowledge

Difficulty Level: Medium

4. A drug is defined as an administered substance that:

- a. produces psychological effects.
- b. is taken orally.
- c. is shaped like a pill or tablet.
- d. alters physiological functioning.

Ans: D

Answer Location: Drugs: Administered substances that alter physiological functions

Learning Objective: Psychopharmacology

Cognitive Domain: Knowledge

Difficulty Level: Easy

5. Which of the following might be considered a drug, based on the textbook's definition?

- a. Food
- b. Vitamin
- c. Aspirin
- d. All of these answers could be considered a drug

Ans: D

Answer Location: Drugs: Administered substances that alter physiological functions

Learning Objective: Psychopharmacology

Cognitive Domain: Application

Difficulty Level: Hard

6. What type of use is defined as using a drug for addressing a specific purpose?

- a. Recreational drug use

- b. Drug misuse
- c. Instrumental drug use
- d. Deliberate drug use

Ans: C

Answer Location: Psychoactive Drugs: Described by Manner of Use

Learning Objective: Why Read a Book on Psychopharmacology?

Cognitive Domain: Knowledge

Difficulty Level: Medium

7. What type of use is defined as using a drug entirely to experience its effects?

- a. Recreational drug use
- b. Therapeutic drug use
- c. Instrumental drug use
- d. Drug abuse

Ans: A

Answer Location: Psychoactive Drugs: Described by Manner of Use

Learning Objective: Why Read a Book on Psychopharmacology?

Cognitive Domain: Knowledge

Difficulty Level: Medium

8. Which of the following best describes someone using a drug instrumentally?

- a. Bob inhaled fumes from the tube of glue in order to feel euphoric.
- b. Juan took some aspirin to reduce his headache pain.
- c. Jeff injected heroin to feel euphoric and to reduce feelings of heroin withdrawal.
- d. Susan consumed cough syrup in order to experience hallucinations.

Ans: B

Answer Location: Psychoactive Drugs: Described by Manner of Use

Learning Objective: Why Read a Book on Psychopharmacology?

Cognitive Domain: Comprehension

Difficulty Level: Medium

9. Joakim consumed a cup of coffee in order to feel more alert. Which of following describes this type of drug use?

- a. Drug misuse
- b. Instrumental use
- c. Recreational use
- d. Drug abuse

Ans: B

Answer Location: Psychoactive Drugs: Described by Manner of Use

Learning Objective: Why Read a Book on Psychopharmacology?

Cognitive Domain: Application

Difficulty Level: Medium

10. All of the following are characteristics of instrumental drug use except:

- a. voluntarily taking a drug.
- b. taking a drug for a reason other than feeling the drug effects.
- c. taking a drug for a specific purpose.
- d. taking a drug in order to feel high from the drug.

Ans: D

Answer Location: Psychoactive Drugs: Described by Manner of Use

Learning Objective: Why Read a Book on Psychopharmacology?

Cognitive Domain: Analysis

Difficulty Level: Hard

11. A(n) _____ drug refers to a treatment for a disorder.

- a. therapeutic
- b. recreational
- c. instrumental
- d. misused

Ans: A

Answer Location: Psychoactive Drugs: Described by Manner of Use

Learning Objective: Why Read a Book on Psychopharmacology?

Cognitive Domain: Knowledge

Difficulty Level: Easy

12. Which of the following DOES NOT describe misuse of a therapeutic drug?

- a. Marie consumed cough syrup to cope with a stressful day at work.
- b. Juanita consumed cough syrup to reduce her cold symptoms.
- c. Tyrone consumed cough syrup to enhance the effects of alcohol.
- d. Ben consumed cough syrup to experience hallucinations.

Ans: B

Answer Location: Psychoactive Drugs: Described by Manner of Use

Learning Objective: Why Read a Book on Psychopharmacology?

Cognitive Domain: Application

Difficulty Level: Medium

13. For the statement, acetaminophen (Tylenol) is an analgesic drug, what is the trade name?

- a. Acetaminophen
- b. Tylenol
- c. Analgesic
- d. The trade name is not provided

Ans: B

Answer Location: Generic Names, Trade Names, Chemical Names, and Street Names for Drugs

Learning Objective: Drugs: Administered Substances That Alter Physiological Functions

Cognitive Domain: Knowledge

Difficulty Level: Easy

14. For the statement, acetaminophen (Tylenol) is an analgesic drug, what is the generic name?

- a. Acetaminophen
- b. Tylenol
- c. Analgesic
- d. The generic name is not provided

Ans: A

Answer Location: Generic Names, Trade Names, Chemical Names, and Street Names for Drugs

Learning Objective: Drugs: Administered Substances That Alter Physiological Functions

Cognitive Domain: Knowledge

Difficulty Level: Easy

15. A drug's _____ name is a nonproprietary name for a drug that indicates the classification of a drug and distinguishes it from other drugs in the class.

- a. street
- b. chemical
- c. trade
- d. generic

Ans: D

Answer Location: Generic Names, Trade Names, Chemical Names, and Street Names for Drugs

Learning Objective: Drugs: Administered Substances That Alter Physiological Functions

Cognitive Domain: Knowledge

Difficulty Level: Easy

16. Which of the following provides the most information about a drug's structure?

- a. Pharmacological name
- b. Trade name
- c. Chemical name
- d. Generic name

Ans: [CD](#)

Answer Location: Generic Names, Trade Names, Chemical Names, and Street Names for Drugs

Learning Objective: Drugs: Administered Substances That Alter Physiological Functions

Cognitive Domain: Knowledge

Difficulty Level: Medium

17. A drug used illegally for recreational purposes might be given a _____ name to convey its effects one experiences when using it.

- a. trade

- b. street
- c. chemical
- d. generic

Ans: B

Answer Location: Generic Names, Trade Names, Chemical Names, and Street Names for Drugs

Learning Objective: Drugs: Administered Substances That Alter Physiological Functions

Cognitive Domain: Knowledge

Difficulty Level: Medium

18. Those who illegally make and sell a drug that causes a striking high might name it _____ to convey the drug's effects.

- a. bentamine
- b. (5R,9R,13S,14S)-4,5 α -epoxy-14-hydroxy-3-methoxy-17-methylmorphinan-6-one
- c. exhilarate
- d. ephinil

Ans: C

Answer Location: Generic Names, Trade Names, Chemical Names, and Street Names for Drugs

Learning Objective: Drugs: Administered Substances That Alter Physiological Functions

Cognitive Domain: Application

Difficulty Level: Medium

19. Dose consists of a ratio of the amount of drug per _____.

- a. an organism's body weight
- b. person treated
- c. the amount needed
- d. amount administered

Ans: A

Answer Location: Drug Effects: Determined by Dose

Learning Objective: Psychoactive Drugs: Described by Manner of Use

Cognitive Domain: Knowledge

Difficulty Level: Medium

20. A veterinarian needed to treat an animal with a drug at a dose of 1.0 g/kg. If the animal weighed 5 kg, then what amount of drug would be given to the animal?

- a. 1 gram
- b. 5 kilograms
- c. 5 grams
- d. 1 kilogram

Ans: C

Answer Location: Drug Effects: Determined by Dose

Learning Objective: Psychoactive Drugs: Described by Manner of Use

Cognitive Domain: Application

Difficulty Level: Medium

21. If a 10 kilogram animal were treated with 5 grams of a drug, what dose of drug was given?

- a. 5 g/kg
- b. 0.5 g/kg
- c. 10 g/kg
- d. 10 g/5 kg

Ans: B

Answer Location: Drug Effects: Determined by Dose

Learning Objective: Psychoactive Drugs: Described by Manner of Use

Cognitive Domain: Application

Difficulty Level: Hard

22. If an adult were prescribed to take a 500 mg of a drug, what does this suggest about the dose?

- a. This dose is likely 0.5 g / 100 kg.
- b. The dose is likely 500 mg / kg.
- c. Insufficient information is provided to answer this question.
- d. The dose is likely 500 mg / average adult body weight.

Ans: D

Answer Location: Drug Effects: Determined by Dose

Learning Objective: Psychoactive Drugs: Described by Manner of Use

Cognitive Domain: Comprehension

Difficulty Level: Medium

23. A dose-effect curve depicts the magnitude of a drug effect by _____.

- a. volume
- b. toxicity
- c. amount of drug
- d. dose

Ans: D

Answer Location: Drug Effects: Determined by Dose

Learning Objective: Psychoactive Drugs: Described by Manner of Use
Cognitive Domain: Knowledge

Difficulty Level: Easy

24. To describe the middle point on a dose-effect curve, a pharmacologist might state the drug is _____.

- a. effective dose 50 (ED₅₀) value
- b. lowest effective and maximally effective dose
- c. therapeutic index
- d. certain safety index

Ans: A

Answer Location: Drug Effects: Determined by Dose

Learning Objective: Psychoactive Drugs: Described by Manner of Use

Cognitive Domain: Knowledge

Difficulty Level: Medium

25. Drugs A and B produce similar types of effects. Drug A has an ED₅₀ value of 10 mg/kg and Drug B has an ED₅₀ value of 5 mg/kg. What can be said about these drugs?

- a. Drug A will have a safer therapeutic index.
- b. Drug B will have a safer therapeutic index.

- c. Drug A is more potent than Drug B.
- d. Drug B is more potent than Drug A.

Ans: D

Answer Location: Drug Effects: Determined by Dose

Learning Objective: Psychoactive Drugs: Described by Manner of Use

Cognitive Domain: Comprehension

Difficulty Level: Medium

26. How is an ED₅₀ value similar to a TD₅₀ value?

- a. Both values reflect a drug's therapeutic effects
- b. Both values indicate 50% of an effect.
- c. Both values are used to calculate a drug's toxic effects.
- d. They can be added together to produce 100 percent efficacy.

Ans: B

Answer Location: Drug Effects: Determined by Dose

Learning Objective: Psychoactive Drugs: Described by Manner of Use

Cognitive Domain: Comprehension

Difficulty Level: Medium

27. All of the following can describe why ED₅₀ and TD₅₀ values are not ideal for calculating a therapeutic index except:

- a. the index uses a value based on 50% of subjects experiencing severe adverse effects.
- b. the index uses a value based on only 50% of subjects experiencing therapeutic drug effects.
- c. the index uses the ED₅₀ value, which is most common for reporting dose-effect curves.
- d. no matter the size of the index, using 50% values suggests that an unacceptable number of patients will likely experience adverse effects.

Ans: C

Answer Location: Drug Effects: Determined by Dose

Learning Objective: Psychoactive Drugs: Described by Manner of Use

Cognitive Domain: Analysis

Difficulty Level: Hard

28. A Certain Safety Index is:

- a. a therapeutic index calculated from a low percentage TD value and a high percentage ED value.
- b. a therapeutic index of 10 or greater.
- c. a therapeutic index of 100 or greater.
- d. a therapeutic index calculated from a high percentage TD value and a high percentage ED value.

Ans: A

Answer Location: Drug Effects: Determined by Dose

Learning Objective: Psychoactive Drugs: Described by Manner of Use

Cognitive Domain: Knowledge

Difficulty Level: Hard

29. Which of the following would most likely be used for calculating a Certain Safety Index?

- a. TD_{99} and ED_{50}
- b. TD_{50} and ED_{50}
- c. TD_1 and ED_{99}
- d. TD_{99} and ED_1

Ans: C

Answer Location: Drug Effects: Determined by Dose

Learning Objective: Psychoactive Drugs: Described by Manner of Use

Cognitive Domain: Comprehension

Difficulty Level: Medium

30. _____, a major area of pharmacology, refers to the physiological actions of drugs.

- a. Pharmacogenetics
- b. Pharmacokinetics
- c. Physiodynamics
- d. Pharmacodynamics

Ans: D

Answer Location: Pharmacology: Pharmacodynamics, Pharmacokinetics, and Pharmacogenetics

Learning Objective: Generic Names, Trade Names, Chemical Names, and Street Names for Drugs

Cognitive Domain: Knowledge

Difficulty Level: Easy

31. Which of the following describe a pharmacodynamic action?

- a. A drug is injected in the arm and later enters the bloodstream.
- b. A drug binds to a neuron and alters the neuron's activity.
- c. A drug binds to another drug in the body.
- d. A drug enters the liver and is quickly metabolized.

Ans: B

Answer Location: Pharmacology: Pharmacodynamics, Pharmacokinetics, and Pharmacogenetics

Learning Objective: Generic Names, Trade Names, Chemical Names, and Street Names for Drugs

Cognitive Domain: Application

Difficulty Level: Medium

32. _____, a major area of pharmacology, refers to the passage of drugs through the body.

- a. Pharmacogenetics
- b. Pharmacokinetics
- c. Physiodynamics
- d. Pharmacodynamics

Ans: B

Answer Location: Pharmacology: Pharmacodynamics, Pharmacokinetics, and Pharmacogenetics

Learning Objective: Generic Names, Trade Names, Chemical Names, and Street Names for Drugs

Cognitive Domain: Knowledge

Difficulty Level: Easy

33. Which of the following describe a pharmacokinetic action?

- a. A drug is exhaled through one's breath.
- b. A drug acts in the hypothalamus to reduce hunger.
- c. A drug acts on the brain's reward pathway to produce rewarding effects.
- d. A drug dissolves in water, but not in physiological saline.

Ans: A

Answer Location: Pharmacology: Pharmacodynamics, Pharmacokinetics, and Pharmacogenetics

Learning Objective: Generic Names, Trade Names, Chemical Names, and Street Names for Drugs

Cognitive Domain: Application

Difficulty Level: Medium

34. The field of _____ may help explain why one person is naturally a fast metabolizer for a drug, whereas another person is naturally a slow metabolizer for the drug.

- a. pharmacodynamics
- b. physiodynamics
- c. pharmacogenetics
- d. pharmacokinetics

Ans: C

Answer Location: Pharmacology: Pharmacodynamics, Pharmacokinetics, and Pharmacogenetics

Learning Objective: Generic Names, Trade Names, Chemical Names, and Street Names for Drugs

Cognitive Domain: Application

Difficulty Level: Medium

35. _____ refers to the amount of drug used to produce a certain magnitude of effect.

- a. Dose
- b. Therapeutic Index
- c. Potency
- d. Pharmacodynamics

Ans: C

Answer Location: Drug Effects: Determined by Dose

Learning Objective: Psychoactive Drugs: Described by Manner of Use

Cognitive Domain: Knowledge

Difficulty Level: Medium

36. For which of the following reasons might a researcher compare the ED₅₀ values between two drugs that produce similar effects?

- a. To determine which compound is more potent.
- b. To calculate a therapeutic index.
- c. To compare their pharmacodynamic properties.
- d. To determine which drug has a dose large enough for adults.

Ans: A

Answer Location: Drug Effects: Determined by Dose

Learning Objective: Psychoactive Drugs: Described by Manner of Use

Cognitive Domain: Analysis

Difficulty Level: Medium

37. Which of the following concerns an assessment of how genetic differences influence a drug's pharmacokinetic and pharmacodynamic effects?

- a. Therapeutic Index
- b. Potency
- c. Developmental pharmacology
- d. Pharmacogenetics

Ans: D

Answer Location: Pharmacology: Pharmacodynamics, Pharmacokinetics, and Pharmacogenetics

Learning Objective: Generic Names, Trade Names, Chemical Names, and Street Names for Drugs

Cognitive Domain: Knowledge

Difficulty Level: Easy

38. Pharmacological effects that can be directly observed by others are referred to as:

- a. psychoactive effects.
- b. objective effects.
- c. pharmacodynamic effects.
- d. subjective effects.

Ans: B

Answer Location: Psychoactive Drugs: Objective and Subjective Effects

Learning Objective: Drug Effects: Determined by Dose

Cognitive Domain: Knowledge

Difficulty Level: Easy

39. Pharmacological effects that cannot be directly observed by others are referred to as:

- a. psychoactive effects.
- b. objective effects.
- c. pharmacodynamic effects.
- d. subjective effects.

Ans: D

Answer Location: Psychoactive Drugs: Objective and Subjective Effects

Learning Objective: Drug Effects: Determined by DoseCognitive Domain: Knowledge

Difficulty Level: [Easy](#)

40. Pam said that taking a particular drug made her feel happy. What type of effect is this?

- a. Pharmacokinetic effect
- b. Pharmacodynamic effect
- c. Subjective effect
- d. Objective effect

Ans: C

Answer Location: Psychoactive Drugs: Objective and Subjective Effects

Learning Objective: Drug Effects: Determined by DoseCognitive Domain: Comprehension

Difficulty Level: Medium

41. Gary noticed that taking a particular drug made his heart rate increase. What type of effect is this?

- a. Pharmacokinetic effect
- b. Pharmacodynamic effect
- c. Subjective effect
- d. Objective effect

Ans: D

Answer Location: Psychoactive Drugs: Objective and Subjective Effects

Learning Objective: Drug Effects: Determined by Dose

Cognitive Domain: Comprehension

Difficulty Level: Medium

42. Which of the following situations refers to a drug's subjective effects?

- a. Juan experienced a rush sensation after ingesting a substance.
- b. John's eyes were dilated after ingesting a substance.
- c. Katie's pulse rate went down after ingesting a substance.
- d. Michelle's noticed herself breathing harder after ingesting a substance.

Ans: A

Answer Location: Psychoactive Drugs: Objective and Subjective Effects

Learning Objective: Drug Effects: Determined by Dose

Cognitive Domain: Application

Difficulty Level: Medium

43. Which of the following situations refers to a drug's objective effects?

- a. Janis felt sad after consuming a substance.
- b. Carol felt feverish after consuming a substance.
- c. Gary rated a drug's effects as highly reinforcing.
- d. Michael felt a sense of energy after consuming a substance.

Ans: B

Answer Location: Psychoactive Drugs: Objective and Subjective Effects

Learning Objective: Drug Effects: Determined by DoseCognitive Domain: Application

Difficulty Level: Medium

44. A(n) _____ variable is a study variable measured by a researcher.

- a. independent
- b. dependent
- c. confound
- d. correlational

Ans: B

Answer Location: Study Designs and the Assessment of Psychoactive Drugs

Learning Objective: Pharmacology: Pharmacodynamics, Pharmacokinetics, and Pharmacogenetics

Cognitive Domain: Knowledge

Difficulty Level: Medium

45. A(n) _____ variable can be a study variable that affects another variable that is measured by researchers.

- a. independent
- b. dependent
- c. confound
- d. correlational

Ans: B

Answer Location: Study Designs and the Assessment of Psychoactive Drugs

Learning Objective: Pharmacology: Pharmacodynamics, Pharmacokinetics, and Pharmacogenetics

Cognitive Domain: Knowledge

Difficulty Level: Medium

46. Juanita, a researcher at a pharmaceutical company, is assessing the effects of an experimental drug on lever pressing behavior in laboratory rats. For this study, what type of variable is the experimental drug?

- a. Confound variable

- b. Experimental variable
- c. Independent variable
- d. Dependent variable

Ans: C

Answer Location: Study Designs and the Assessment of Psychoactive Drugs

Learning Objective: Pharmacology: Pharmacodynamics, Pharmacokinetics, and Pharmacogenetics

Cognitive Domain: Analysis

Difficulty Level: Hard

47. Juanita, a researcher at a pharmaceutical company, is assessing the effects of an experimental drug on lever pressing behavior in laboratory rats. For this study, what type of variable is lever pressing?

- a. Confound variable
- b. Experimental variable
- c. Independent variable
- d. Dependent variable

Ans: D

Answer Location: Study Designs and the Assessment of Psychoactive Drugs

Learning Objective: Pharmacology: Pharmacodynamics, Pharmacokinetics, and Pharmacogenetics

Cognitive Domain: Analysis

Difficulty Level: Hard

48. In a(n) _____ an investigator does not alter the independent variable.

- a. correlational study
- b. experimental study
- c. single-blind procedure
- d. open-label study

Ans: A

Answer Location: Study Designs and the Assessment of Psychoactive Drugs

Learning Objective: Pharmacology: Pharmacodynamics, Pharmacokinetics, and Pharmacogenetics

Cognitive Domain: Knowledge

Difficulty Level: Medium

49. In a(n) _____ an investigator alters the independent variable.

- a. correlational study
- b. experimental study
- c. single-blind procedure
- d. clinical study

Ans: B

Answer Location: Study Designs and the Assessment of Psychoactive Drugs

Learning Objective: Pharmacology: Pharmacodynamics, Pharmacokinetics, and Pharmacogenetics

Cognitive Domain: Knowledge

Difficulty Level: Hard

50. For a clinical study, researchers gave one group of participants a low dose of drug, another group a high dose of drug, and the final group placebo. How many treatment arms does this study have?

- a. 1
- b. 2
- c. 3
- d. 4

Ans: C

Answer Location: Study Designs and the Assessment of Psychoactive Drugs

Learning Objective: Pharmacology: Pharmacodynamics, Pharmacokinetics, and Pharmacogenetics

Cognitive Domain: Application

Difficulty Level: Medium

51. Jin would like to conduct an experiment to compare the effects of a new drug in one group of participants to a group of participants who do not receive a drug. In the non-treated group, what would Jin most likely provide?

- a. A different drug
- b. A placebo
- c. A different dose of the new drug
- d. A single-blind design

Ans: B

Answer Location: Study Designs and the Assessment of Psychoactive Drugs

Learning Objective: Pharmacology: Pharmacodynamics, Pharmacokinetics, and Pharmacogenetics

Cognitive Domain: Analysis

Difficulty Level: Medium

52. A _____ consists of a substance identical in appearance to a drug but physiologically inert.

- a. drug
- b. placebo
- c. teratogen
- d. control group

Ans: B

Answer Location: Study Designs and the Assessment of Psychoactive Drugs

Learning Objective: Pharmacology: Pharmacodynamics, Pharmacokinetics, and Pharmacogenetics

Cognitive Domain: Knowledge

Difficulty Level: Medium

53. Drug experiments in clinical trials describe the number of treatments and doses provided to groups of study participants as _____.

- a. control groups
- b. dependent variables

- c. placebos
- d. treatment arms

Ans: D

Answer Location: Study Designs and the Assessment of Psychoactive Drugs

Learning Objective: Pharmacology: Pharmacodynamics, Pharmacokinetics, and Pharmacogenetics

Cognitive Domain: Knowledge

Difficulty Level: Medium

54. Brian was asked to find detailed information about the study designs and results of studies on a particular drug used in clinical trials. Which of the following would be best for Brian to look at?

- a. The drug's certain safety index
 - b. The study's treatment arms
 - c. A clinical study report for the drug
 - d. Informed consent documents for the drug
- Ans: C

Answer Location: Study Designs and the Assessment of Psychoactive Drugs

Learning Objective: Pharmacology: Pharmacodynamics, Pharmacokinetics, and Pharmacogenetics

Cognitive Domain: Application

Difficulty Level: Medium

55. While both single-blind and double-blind procedures both prevent a study participant from knowing what a test drug is, single-blind procedures differ from double-blind procedures by:

- a. not allowing investigators to know which drug participants received.
- b. allowing study participants to later choose which drug.
- c. allowing participants in other groups to know which drug they received.
- d. allowing investigators to know which drug participants received.

Ans: D

Answer Location: Study Designs and the Assessment of Psychoactive Drugs

Learning Objective: Pharmacology: Pharmacodynamics, Pharmacokinetics, and Pharmacogenetics

Cognitive Domain: Comprehension

Difficulty Level: Hard

56. All of the following are features of a double-blind procedure, except:

- a. these procedures are used in clinical studies.
- b. these procedures are best when ethical consequences prevent disguising study medications.
- c. study participants do not know if they received a drug or placebo.
- d. study investigators do not know which participants receive drug or placebo.

Ans: B

Answer Location: Study Designs and the Assessment of Psychoactive Drugs

Learning Objective: Pharmacology: Pharmacodynamics, Pharmacokinetics, and Pharmacogenetics

Cognitive Domain: Analysis

Difficulty Level: Hard

57. A(n) _____ refers to the assignment of study treatments without preventing participants from knowing [ing](#) which treatment they receive.

- a. single-blind procedure
- b. double-blind procedure
- c. open-label study
- d. treatment arm

Ans: C

Answer Location: Study Designs and the Assessment of Psychoactive Drugs

Learning Objective: Pharmacology: Pharmacodynamics, Pharmacokinetics, and Pharmacogenetics

Cognitive Domain: Knowledge

Difficulty Level: Medium

58. _____ validity refers to the control of variables with potential to influence a dependent variable.

- a. Internal
- b. External
- c. Construct
- d. Confound

Ans: A

Answer Location: Validity: Addressing the Quality and Impact of a Study

Learning Objective: Psychoactive Drugs: Objective and Subjective Effects

Cognitive Domain: Knowledge

Difficulty Level: Easy

59. Discovering that study participants learned they were given a placebo would serve as a threat to _____ validity.

- a. internal
- b. external
- c. construct
- d. face

Ans: A

Answer Location: Validity: Addressing the Quality and Impact of a Study

Learning Objective: Psychoactive Drugs: Objective and Subjective Effects

Cognitive Domain: Application

Difficulty Level: Hard

60. _____ validity refers to how well study findings generalize beyond the study conditions.

- a. Face
- b. Construct
- c. Internal
- d. External

Ans: D

Answer Location: Validity: Addressing the Quality and Impact of a Study

Learning Objective: Psychoactive Drugs: Objective and Subjective Effects

Cognitive Domain: Knowledge

Difficulty Level: Easy

61. Learning that a clinical trial examined the effects of a drug only in Caucasian males would serve as a threat to _____ validity.

- a. internal
- b. face
- c. external
- d. predictive

Ans: C

Answer Location: Validity: Addressing the Quality and Impact of a Study

Learning Objective: Psychoactive Drugs: Objective and Subjective Effects

Cognitive Domain: Application

Difficulty Level: Hard

62. All of the following impact internal validity except:

- a. the model used resembles the disorder.
- b. using a placebo control group.
- c. using inconsistent methods to measure the dependent variable.
- d. accidentally changing the dose of the study drug.

Ans: A

Answer Location: Validity: Addressing the Quality and Impact of a Study

Learning Objective: Psychoactive Drugs: Objective and Subjective Effects

Cognitive Domain: Analysis

Difficulty Level: Hard

63. A substance found harmful for a fetus is called a _____.

- a. neurotoxin
- b. teratogen
- c. embryolic toxin

d. nocebo

Ans: B

Answer Location: Validity: Addressing the Quality and Impact of a Study

Learning Objective: Psychoactive Drugs: Objective and Subjective Effects

Cognitive Domain: Knowledge

Difficulty Level: Easy

64. Discovering a _____ variable may question the effectiveness of an independent variable.

a. dependent

b. confound

c. pathological

d. pharmacological

Ans: B

Answer Location: Validity: Addressing the Quality and Impact of a Study

Learning Objective: Psychoactive Drugs: Objective and Subjective Effects

Cognitive Domain: Comprehension

Difficulty Level: Medium

65. _____ validity refers to the appearance of a test measuring what a researcher considers it to measure.

a. Internal

b. Predictive

c. External

d. Face

Ans: D

Answer Location: Validity: Addressing the Quality and Impact of a Study

Learning Objective: Psychoactive Drugs: Objective and Subjective Effects

Cognitive Domain: Knowledge

Difficulty Level: Easy

66. A researcher develops an animal model, using monkeys, of Parkinson's Disease, which is noted by tremor, among other symptoms, in humans. In the behavioral procedure, monkeys also exhibited a clear tremor. What is this test an example of?

- a. Face validity
- b. Construct validity
- c. Predictive validity
- d. External Validity

Ans: A

Answer Location: Validity: Addressing the Quality and Impact of a Study

Learning Objective: Psychoactive Drugs: Objective and Subjective Effects

Cognitive Domain: Application

Difficulty Level: Medium

67. The type of validity that addresses how well a study's findings relate to the underlying theory of a study's objectives is called _____.

- a. face validity
- b. construct validity
- c. internal validity
- d. predictive validity

Ans: B

Answer Location: Validity: Addressing the Quality and Impact of a Study

Learning Objective: Psychoactive Drugs: Objective and Subjective Effects

Cognitive Domain: Knowledge

Difficulty Level: Medium

68. A researcher develops an animal model, using monkeys, of Parkinson's Disease, which is noted by tremor, among other symptoms, in humans. In the behavioral procedure, monkeys also exhibited a clear tremor and the researchers find that the monkeys have degeneration to dopamine neurons similar to that seen in Parkinson's disease patients. What is this test an example of?

- a. Internal validity

- b. Predictive validity
- c. Face validity
- d. Construct validity

Ans: D

Answer Location: Validity: Addressing the Quality and Impact of a Study

Learning Objective: Psychoactive Drugs: Objective and Subjective Effects

Cognitive Domain: Analysis

Difficulty Level: Hard

69. _____ validity addresses how well a model predicts treatment effects.

- a. Face
- b. Predictive
- c. External
- d. Construct

Ans: B

Answer Location: Validity: Addressing the Quality and Impact of a Study

Learning Objective: Psychoactive Drugs: Objective and Subjective Effects

Cognitive Domain: Knowledge

Difficulty Level: Easy

70. _____ validity implies that a researcher can evaluate the effectiveness of an experimental treatment in a model that does not resemble the disorder to be treated.

- a. External
- b. Face
- c. Predictive
- d. Constructive

Ans: B

Answer Location: Validity: Addressing the Quality and Impact of a Study

Learning Objective: Psychoactive Drugs: Objective and Subjective Effects

Cognitive Domain: Comprehension

Difficulty Level: Medium

71. Which of the following are NOT appropriate reasons for conducting animal research?

- a. There is a lack of feasible alternatives (e.g., computer simulations or human research) available for the particular objectives of a study.
- b. Data collected from animal research are predictive of findings that might be found tests conducted in humans.
- c. The potential adverse effects of a drug should be assessed in animals before giving the drug to humans.
- d. Animal research is less expensive than human research.

Ans: D

Answer Location: Animals and Advancing Medical Research

Learning Objective: Study Designs and the Assessment of Psychoactive Drugs?

Cognitive Domain: Analysis

Difficulty Level: Medium

72. When reviewing a study application to use animals in research, the Institutional Animal Care and Use Committee (IACUC) uses the 3Rs, which stands for:

- a. require, restrict, and reduce.
- b. refinement, restrict, and reduction.
- c. replacement, reduction, and refinement.
- d. refinement, replication, and reduction.

Ans: C

Answer Location: Animals and Advancing Medical Research

Learning Objective: Study Designs and the Assessment of Psychoactive Drugs

Cognitive Domain: Knowledge

Difficulty Level: Hard

73. Which of the following would be an appropriate response to an Institutional Animal Care and Use Committee's (IACUC's) request for more refinement in a study application to use animals in research?

- a. The researcher found an alternative study procedure that caused less pain and distress for study animals.
- b. The researcher decided to use fewer animals in the study.
- c. The researcher found a computer simulation that could be used instead.
- d. The researcher added new study objectives to increase the scientific value of the study.

Ans: A

Answer Location: Animals and Advancing Medical Research

Learning Objective: Study Designs and the Assessment of Psychoactive Drugs

Cognitive Domain: Application

Difficulty Level: Medium

74. Which of the following would has high ethical costs?

- a. Study animals experienced substantial pain and distress and significant scientific discoveries were made.
- b. Study animals experience substantial pain and distress and minimal scientific gains resulted from the study.
- c. Study animals experienced minimal pain and distress and significant scientific discoveries were made
- d. Study animals experience minimal pain and distress and minimal scientific gains resulted from the study.

Ans: B

Answer Location: Animals and Advancing Medical Research

Learning Objective: Study Designs and the Assessment of Psychoactive Drugs

Cognitive Domain: Comprehension

Difficulty Level: Medium

75. _____ consists of a participant's agreement to enroll in a study after having a thorough understanding of a study's procedures, possible gains, and potential risks.

- a. The 3Rs
- b. Internal validity
- c. Clinical study report

d. Informed consent

Ans: D

Answer Location: Researchers Consider Many Ethical Issues When Conducting Human Research

Learning Objective: Study Designs and the Assessment of Psychoactive Drugs

Cognitive Domain: Knowledge

Difficulty Level: Easy

76. When identifying a disorder to treat during the stages of drug development, which of the following would likely NOT be determined?

- a. The size of the population to be treated.
- b. The likely toxic doses of the test drugs.
- c. The current state of scientific knowledge on the disease or treatments for the disease.
- d. The effectiveness of other treatments already on the market.

Ans: B

Answer Location: From Actions to Effects: Therapeutic Drug Development

Learning Objective: Validity: Addressing the Quality and Impact of an Experiment

Cognitive Domain: Analysis

Difficulty Level: Medium

77. Experiments conducted to determine an experimental drug's potential for abuse occurs during which stage of drug development?

- a. Drug synthesis
- b. Clinical trial testing
- c. High throughput screening
- d. Safety pharmacology

Ans: D

Answer Location: From Actions to Effects: Therapeutic Drug Development

Learning Objective: Validity: Addressing the Quality and Impact of an Experiment

Cognitive Domain: Comprehension

Difficulty Level: Medium

78. The following reasons describe why high throughput screening methods could be used except:

- a. to have data on the safety of drugs in order to proceed to clinical trials.
- b. to series quick feedback to chemists who will produce more compounds based on the results.
- c. to rapidly test a series of drugs for a biological target.
- d. to determine which drugs from a large batch of compounds might be meeting project goals at a particular biological target.

Ans: A

Answer Location: From Actions to Effects: Therapeutic Drug Development

Learning Objective: Validity: Addressing the Quality and Impact of an Experiment

Cognitive Domain: Analysis

Difficulty Level: Medium

79. Why might a study drug fail to proceed from Phase 2 to Phase 3 clinical trials?

- a. The drug produced too many adverse effects.
- b. The drug did not appear to be effective.
- c. The drug was not more effective than drugs already on the market.
- d. All of these answers are correct.

Ans: D

Answer Location: From Actions to Effects: Therapeutic Drug Development

Learning Objective: Validity: Addressing the Quality and Impact of an Experiment

Cognitive Domain: Application

Difficulty Level: Hard

80. Which of the following Clinical Trial Phases best describes a drug tested at low doses for only a short period of time?

- a. Phase 1
- b. Phase 2
- c. Phase 3
- d. Phase 4

Ans: A

Answer Location: From Actions to Effects: Therapeutic Drug Development

Learning Objective: Validity: Addressing the Quality and Impact of an Experiment

Cognitive Domain: Application

Difficulty Level: Easy

True/False

1. A person using a drug to feel a high is an example of instrumental drug use.

Ans: False

Answer Location: Psychoactive Drugs: Described by Manner of Use

Cognitive Domain: Comprehension

Difficulty Level: Easy

2. Recreational drug use refers to using a drug to treat a disorder.

Ans: False

Answer Location: Psychoactive Drugs: Described by Manner of Use

Cognitive Domain: Knowledge

Difficulty Level: Easy

3. A drug's generic name is a nonproprietary name indicating the classification of a drug.

Ans: True

Answer Location: Generic Names, Trade Names, Chemical Names, and Street Names for Drugs

Cognitive Domain: Knowledge

Difficulty Level: Easy

4. A drug's chemical name is trademarked.

Ans: False

Answer Location: Generic Names, Trade Names, Chemical Names, and Street Names for Drugs

Cognitive Domain: Comprehension

Difficulty Level: Medium

5. The magnitude of a drug's effects based on dose can be illustrated on a dose-effect curve.

Ans: True

Answer Location: Drug Effects: Determined by Dose

Cognitive Domain: Knowledge

Difficulty Level: Easy

6. An ED₅₀ value indicates the dose at which 50% of the drug's effect was produced.

Ans: True

Answer Location: Drug Effects: Determined by Dose

Cognitive Domain: Knowledge

Difficulty Level:

7. The ED₅₀ value for Drug B is 2.0 mg/kg and the ED₅₀ value for Drug A is 4.0 mg/kg. This means that Drug B is more potent than Drug A.

Ans: True

Answer Location: Drug Effects: Determined by Dose

Cognitive Domain: Application

Difficulty Level: Medium

8. The therapeutic index reflects a ratio of a drug's a toxic dose-effect curve value relative to a therapeutic dose-effect curve value.

Ans: True

Answer Location: Drug Effects: Determined by Dose

Cognitive Domain: Knowledge

Difficulty Level: Medium

9. A researcher studied how well a drug entered the brain after it was administered. Her study was a type of pharmacokinetic study.

Ans: True

Answer Location: Pharmacology: Pharmacodynamics, Pharmacokinetics, and Pharmacogenetics

Cognitive Domain: Comprehension

Difficulty Level: Medium

10. Pharmacodynamics studies how well drugs pass through the body.

Ans: False

Answer Location: Pharmacology: Pharmacodynamics, Pharmacokinetics, and Pharmacogenetics

Cognitive Domain: Knowledge

Difficulty Level: Easy

11. A researcher provided a test drug to a group of study participants, and afterward asked participants to rate how the drug's effects feel. The ratings serve as an example of objective effects.

Ans: False

Answer Location: Psychoactive Drugs: Objective and Subjective Effects

Cognitive Domain: Application

Difficulty Level: Medium

12. A researcher provided a test drug to a group of study participants, and afterward asked participants to rate how the drug's effects feel. The dependent variable is this study was the rating on how the drug felt.

Ans: True

Answer Location: Study Designs and the Assessment of Psychoactive Drugs

Cognitive Domain: Application

Difficulty Level: Medium

13. A placebo refers to a substance identical in appearance to a drug but physiologically inert.

Ans: True

Answer Location: Study Designs and the Assessment of Psychoactive Drugs

Cognitive Domain: Knowledge

Difficulty Level: Easy

14. An animal study that causes no pain or distress and produces a major scientific discovery would have low ethical costs.

Ans: True

Answer Location: Animals and Advancing Medical Research

Cognitive Domain: Comprehension

Difficulty Level: Easy

15. During the stages of drug development, safety pharmacology experiments are conducted during phase 1 clinical trials.

Ans: False

Answer Location: From Actions to Effects: Therapeutic Drug Development

Cognitive Domain: Knowledge

Difficulty Level: Easy

Completion (Fill-in-the-Blank)

1. A _____ is an administered substance that alters physiological functioning.

Ans: drug

Answer Location: Drugs: Administered Substances That Alter Physiological Functions

Cognitive Domain: Knowledge

Difficulty Level: Easy

2. _____ drug use consists of using a drug to address a specific purpose.

Ans: Instrumental

Answer Location: Psychoactive Drugs: Described by Manner of Use

Cognitive Domain: Knowledge

Difficulty Level: Easy

3. A drug's _____ name is a nonproprietary name that indicates the classification for a drug and distinguishes a drug from others in the same class

Ans: generic

Answer Location: Generic Names, Trade Names, Chemical Names, and Street Names for Drugs

Cognitive Domain: Knowledge

Difficulty Level: Easy

4. A _____ Index is calculated by dividing a toxic dose that caused toxicity in only 1 percent of the subjects—referred to as a TD_1 —and dividing this by a dose that achieved a 99 percent therapeutic effect—an ED_{99} .

Ans: Certain Safety

Answer Location: Drug Effects: Determined by Dose

Cognitive Domain: Knowledge

Difficulty Level: Easy

5. _____ refers to the amount of drug used to produce a certain magnitude of effect.

Ans: Potency

Answer Location: Drug Effects: Determined by Dose

Cognitive Domain: Knowledge

Difficulty Level: Easy

6. _____ refers to the physiological actions of drugs. For psychoactive drugs, this includes the drug's actions on the nervous system.

Ans: Pharmacodynamics

Answer Location: Pharmacology: Pharmacodynamics, Pharmacokinetics, and Pharmacogenetics

Cognitive Domain: Knowledge

Difficulty Level: Easy

7. _____ is the study of how genetic differences influence a drug's pharmacokinetic and pharmacodynamic effects.

Ans: Pharmacogenetics

Answer Location: Pharmacology: Pharmacodynamics, Pharmacokinetics, and Pharmacogenetics

Cognitive Domain: Knowledge

Difficulty Level: Easy

8. Measuring how quickly someone is breathing after taking a certain drug is an example of a(n) _____ effect.

Ans: objective

Answer Location: Psychoactive Drugs: Objective and Subjective Effects

Cognitive Domain: Application

Difficulty Level: Medium

9. _____ studies refer to the assignment of study treatments without using blinded procedures

Ans: Open-label

Answer Location: Study Designs and the Assessment of Psychoactive Drugs

Cognitive Domain: Knowledge

Difficulty Level: Easy

10. A _____ is a substance harmful to a fetus.

Ans: teratogen

Answer Location: Validity: Addressing the Quality and Impact of a Study

Cognitive Domain: Knowledge

Difficulty Level: Easy

Essay

1. Compare and contrast the following names used to describe psychopharmacology: Psychopharmacology, Behavioral Pharmacology, and Neuropsychopharmacology.

Ans: All three names refer to the study of drugs. Psychopharmacology is more general—the study of how drugs affect mood, perception, thinking, or behavior. Behavioral pharmacology emphasizes behavior analysis principles and concepts to interpret drug effects and neuropsychopharmacology emphasizes the effects drugs have on the nervous system.

Answer Location: Psychopharmacology

Cognitive Domain: Knowledge

Difficulty Level: Medium

2. The book discussed how drugs are described by their manner of use. Write out the definition of these different types of use and describe how marijuana might serve as an example of each of these different uses.

Ans: Instrumental drug use consists of using a drug to address a specific purpose. Recreational drug use refers to using a drug entirely to experience its effects. Someone may use marijuana to treat a disorder or condition—this is an example of an instrumental drug use. Someone else may use marijuana entirely to enjoy its effects—this is an example of recreational drug use. Note that marijuana was not covered in chapter 1, so this answer should not be expected to include specific drug effects from marijuana.

Answer Location: Psychoactive Drugs: Described by Manner of Use

Cognitive Domain: Application

Difficulty Level: Medium

3. Define objective and subjective effects. Provide an example for each.

Ans: Objective effects are pharmacological effects that can be directly observed by others. An example would consist of something that other can measure, such as heart rate, body temperature, or body movement. Subjective effects are pharmacological effects that cannot be directly observed by others. An example would consist of something that others cannot directly observe, such as someone indicating how a drug makes him feel.

Answer Location: Psychoactive Drugs: Objective and Subjective Effects

Cognitive Domain: Application

Difficulty Level: Medium

4. Define single-blind procedure, double-blind procedure, and open-label studies. Provide a rationale for each.

Ans: In a single-blind procedure, researchers do not inform study participants which treatment or placebo they received. Rationale: To eliminate potential bias by study participants. In a double-blind procedure, neither the participants nor the investigators know the treatment assignments during the study. Rationale: To eliminate potential bias by study participants and study investigators. Open-label studies refer to the assignment of study treatments without using

blinded procedures. Rationale: There may be ethical reasons that requiring informing participants which treatment was given.

Answer Location: Study Designs and the Assessment of Psychoactive Drugs

Cognitive Domain: Knowledge

Difficulty Level: Medium

5. A team of researchers developed a new cellular model for a particular eye disease. Define face, construct, and predictive validity and indicate how the model could address each type.

Ans: Face validity refers to the appearance of a test measuring what a researcher considers it to measure. For the model, face validity might occur if the appearance of the cells is similar to those found in the eye disease. Construct validity addresses how well a study's findings relate to the underlying theory of a study's objectives. For the model, whatever is causing abnormal functions of the cells would be similar to those thought to be causing the eye disease. Predictive validity addresses how well a model predicts treatment effects. For the model, a chemical agent found to have beneficial effects in the model would also have beneficial effects for the disease.

Answer Location: Validity: Addressing the Quality and Impact of a Study

Cognitive Domain: Application

Difficulty Level: Medium

6. You are a member of your university's Institutional Animal Care and Use Committee and you have received an application for an animal research study. The researcher would like to determine if a new drug may reduce symptoms of fibromyalgia, a chronic pain disorder, and proposes studying 100 monkeys using procedures that will cause moderate pain. A federal agency has reviewed a grant proposal submitted by the researcher and found the work to have high scientific value. Provide questions or comments for your review of the application that includes each of the 3Rs and an ethical cost assessment.

Ans: The 3Rs consists of replacement, reduction, and refinement. For replacement, one may ask if a computer simulation, studies using cells, or studies using invertebrates may be used instead. For reduction, one may ask if these studies can be conducted in fewer animals. For refinement, one may ask if less painful procedures could be used for if a pain-relieving medication could be provided. The ethical cost can be justified if the work will lead to important gains in the

scientific field, although making the procedures less painful would lower the ethical cost of these studies.

Answer Location: Animals and Advancing Medical Research

Cognitive Domain: Application

Difficulty Level: Medium

7. You are a pharmacologist working for a large pharmaceutical company. A team of researchers at the company reported that a new experimental drug's therapeutic index was 10. However, providing no other information about the index, you are left wondering about how to interpret this finding. Based on what you know about how therapeutic indexes are determined, provide a question to ask the research team and indicate the rationale for this question.

Ans: A comprehensive answer would note that TIs are derived from effective dose (ED) and toxic dose (TD) values. A safe TI would be calculated using an ED99 and a TD1, or something more extreme. A likely question to be asked would be "What ED and TD values were used?" Another might be "How many subjects experienced toxic effects at a high ED value (e.g., ED99)?" Another might be, "Is this also a Certain Safety Index?"

Answer Location: Drug Effects: Determined by Dose

Cognitive Domain: Application

Difficulty Level: Hard

8. Name and define each of the stages of therapeutic drug development.

Ans: Stage 1: Identify disorder to treat: Decisions include feasibility and profitability concerns. Stage 2: Drug synthesis: Chemists synthesize experimental compounds. Stage 3: Biological experimentation: High-throughput screening methods provide basic biological information about compounds. Results are sent to chemists and guide synthesis of further compounds. Stage 4: Focused screening methods: Focused testing occurs with most promising compounds identified during Stage 3. Stage 5: Safety pharmacology: Tests identify adverse effects and toxic doses. Stage 6: Clinical trials: Most effective and safest compounds tested from previous stages are tested in humans: Regularly approval sought after positive clinical findings.

Answer Location: From Actions to Effects: Therapeutic Drug Development

Cognitive Domain: Knowledge

Difficulty Level: Medium

9. List and describe the goals of each clinical trial phase.

Ans: Phase 1: Determine a drug's most likely and frequent adverse effects to occur during treatment. Phase 2: Determination of therapeutic effectiveness; experimental drug may be compared to standard medical treatment; adverse effects continue to be monitored. Phase 3: Further determination of therapeutic effectiveness; experimental drug may be compared to standard medical treatment; adverse effects continue to be monitored. Phase 4: Occurs after FDA approves a drug for the market; might address remaining questions or concerns about the drug; goal is to further determine features of a drug's therapeutic effectiveness and adverse effects.

Answer Location: From Actions to Effects: Therapeutic Drug Development

Cognitive Domain: Knowledge

Difficulty Level: Medium