Drugs and the Neuroscience of Behavior 4th edition Prus Test Bank

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Drugs and the Neuroscience of Behavior (4th)

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Total Questions: 121

Multiple Choice (86)

Q1. *[Multiple Choice] · Cognitive Domain: Knowledge*

Which fields are encompassed in psychopharmacology?

a) psychology and pharmacology ✓ correct
b) psychology and sociology
c) biology and sociology
d) pharmacy and pharmacology

Q2. *[Multiple Choice] · Cognitive Domain: Analysis*

Which scenario best 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 who feels euphoric after eating cannabis. ✓ correct
d) None of these answers describe a psychoactive drug.

Q3. *[Multiple Choice] · Cognitive Domain: Knowledge*

Drugs used to treat disorders are referred to as _____.

a) psychotropic drugs ✓ correct
b) psychoactive drugs
c) alternative medicines
d) recreational drugs

Q4. *[Multiple Choice] · Cognitive Domain: Knowledge*

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 ✓ correct

Q5. *[Multiple Choice] · Cognitive Domain: Comprehension*

What might be considered a drug, based on the textbook's definition?

a) food
b) vitamin
c) aspirin
d) all of the above ✓ correct

Q6. *[Multiple Choice] · Cognitive Domain: Comprehension*

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 ✓ correct
d) deliberate drug use

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Q7. *[Multiple Choice] · Cognitive Domain: Comprehension*

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

a) recreational drug use ✓ correct
b) therapeutic drug use
c) instrumental drug use
d) drug abuse

Q8. *[Multiple Choice] · Cognitive Domain: Analysis*

Which scenario 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. ✓ correct
c) Jeff injected heroin to feel euphoric and to reduce feelings of heroin withdrawal.
d) Susan consumed cough syrup in order to experience hallucinations.

Q9. *[Multiple Choice] · Cognitive Domain: Application*

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

a) drug misuse
b) instrumental use ✓ correct
c) recreational use
d) drug abuse

Q10. *[Multiple Choice] · Cognitive Domain: Analysis*

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's effects
c) taking a drug for a specific purpose
d) taking a drug in order to feel high from the drug ✓ correct

Q11. *[Multiple Choice] · Cognitive Domain: Knowledge*

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

a) psychotropic ✓ correct
b) recreational
c) instrumental
d) misused

Q12. *[Multiple Choice] · Cognitive Domain: Application*

Which scenario does not describe misuse of a therapeutic drug?

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

Q13. *[Multiple Choice] · Cognitive Domain: Knowledge*

Consider this statement: "Acetaminophen (Tylenol) is an analgesic drug". What is the brand name?

a) acetaminophen
b) Tylenol ✓ correct
c) analgesic
d) drug

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Q14. *[Multiple Choice] · Cognitive Domain: Knowledge*

Consider this statement: “Acetaminophen (Tylenol) is an analgesic drug”. What is the generic name?

a) acetaminophen ✓ correct
b) Tylenol
c) analgesic
d) drug

Q15. *[Multiple Choice] · Cognitive Domain: Knowledge*

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) brand
d) generic ✓ correct

Q16. *[Multiple Choice] · Cognitive Domain: Knowledge*

What provides the most information about a drug’s structure?

a) pharmacological name
b) brand name
c) chemical name ✓ correct
d) generic name

Q17. *[Multiple Choice] · Cognitive Domain: Knowledge*

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

a) brand
b) street ✓ correct
c) chemical
d) generic

Q18. *[Multiple Choice] · Cognitive Domain: Application*

Those who illegally make and sell a drug that causes a strong high might give it the street name _____ to convey the drug’s effects.

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

Q19. *[Multiple Choice] · Cognitive Domain: Comprehension*

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

a) an organism’s body weight ✓ correct
b) person treated
c) the amount needed
d) the amount administered

Q20. *[Multiple Choice] · Cognitive Domain: Application*

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 g
b) 5 kg
c) 5 g ✓ correct
d) 1 kg

Q21. *[Multiple Choice] · Cognitive Domain: Application*

If a 10 kg animal were treated with 5 g of a drug, what dose of drug was given?

a) 5 g/kg
b) 0.5 g/kg ✓ correct
c) 10 g/kg
d) 10 g/5 kg

Q22. *[Multiple Choice] · Cognitive Domain: Comprehension*

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

a) The 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/the patient's body weight. ✓ correct

Q23. *[Multiple Choice] · Cognitive Domain: Knowledge*

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

a) volume
b) toxicity
c) therapeutic index
d) dose ✓ correct

Q24. *[Multiple Choice] · Cognitive Domain: Comprehension*

To describe the middle point on a dose–effect curve, a pharmacologist might state the drug's _____.

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

Q25. *[Multiple Choice] · Cognitive Domain: Comprehension*

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. ✓ correct

Q26. *[Multiple Choice] · Cognitive Domain: Comprehension*

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. ✓ correct
c) Both values are used to calculate a drug's toxic effects.
d) They can be added together to produce 100% efficacy.

Q27. *[Multiple Choice] · Cognitive Domain: Analysis*

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

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Q28. *[Multiple Choice] · Cognitive Domain: Comprehension*

A Certain Safety Factor is _____.

a) a therapeutic index calculated from a low–percentage TD value and a high–percentage ED value ✓ correct

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

Q29. *[Multiple Choice] · Cognitive Domain: Comprehension*

What would most likely be used for calculating a Certain Safety Index?

a) TD99 and ED50

b) TD50 and ED50

c) TD1 and ED99 ✓ correct

d) TD99 and ED1

Q30. *[Multiple Choice] · Cognitive Domain: Knowledge*

With _____ effects the magnitude is the sum of each drug's effect alone.

a) certain safety

b) synergistic drug

c) potency

d) additive drug ✓ correct

Q31. *[Multiple Choice] · Cognitive Domain: Analysis*

Which statement is true regarding over–the–counter medications?

a) The "one to two" does range refers to all people who need the medication.

b) The dosing instructions assume an average adult's body weight. ✓ correct

c) Smaller adults should take two tablets no matter their weight.

d) A larger adult should take double the recommended dose to ensure they feel the drugs' effects.

Q32. *[Multiple Choice] · Cognitive Domain: Comprehension*

What does it mean when a drug is described as "highly potent"?

a) Drug effects occur at higher doses.

b) Drug effects occur at lower doses. ✓ correct

c) The drug has an intense smell and taste.

d) The drug has a weak smell and taste.

Q33. *[Multiple Choice] · Cognitive Domain: Application*

Imagine you're interested in finding an LD50 value for compound. What resource would you refer to in order to find that value?

a) safety data sheet ✓ correct

b) drug potency

c) dose response curve

d) drug dose

Q34. *[Multiple Choice] · Cognitive Domain: Comprehension*

The _____ provide(s) key information about physical properties, exposure risks, safe disposals, toxicological information, and other information.

a) synergistic drug effects

b) therapeutic index

c) safety data sheet ✓ correct

d) additive drug effects

Q35. *[Multiple Choice] · Cognitive Domain: Knowledge*

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

a) Dose
b) Therapeutic index
c) Potency ✓ correct
d) Dose–response curve

Q36. *[Multiple Choice] · Cognitive Domain: Analysis*

Why might a researcher compare the ED50 values between two drugs that produce similar effects?

a) to determine which compound is more potent ✓ correct
b) to calculate a therapeutic index
c) to compare their pharmacodynamic properties
d) to determine which drug has a dose large enough for adults

Q37. *[Multiple Choice] · Cognitive Domain: Knowledge*

TD50 values allow for the determination of a _____.

a) therapeutic index ✓ correct
b) potency
c) toxic dose
d) dose–effect curve

Q38. *[Multiple Choice] · Cognitive Domain: Knowledge*

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

a) psychoactive effects
b) objective effects ✓ correct
c) pharmacodynamic effects
d) subjective effects

Q39. *[Multiple Choice] · Cognitive Domain: Knowledge*

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 ✓ correct

Q40. *[Multiple Choice] · Cognitive Domain: Comprehension*

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 ✓ correct
d) objective effect

Q41. *[Multiple Choice] · Cognitive Domain: Comprehension*

Gary noticed that taking a particular drug made him lose his balance. What type of effect is this?

a) pharmacokinetic effect
b) pharmacodynamic effect
c) subjective effect
d) objective effect ✓ correct

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Q42. *[Multiple Choice] · Cognitive Domain: Application*

Which situation depicts a drug's subjective effects?

a) Juan experienced a rush sensation after ingesting a substance. ✓ correct
b) John's eyes were dilated after ingesting a substance.
c) Katie began trembling after ingesting a substance.
d) Michelle noticed herself breathing harder after ingesting a substance.

Q43. *[Multiple Choice] · Cognitive Domain: Application*

Which situation depicts a drug's objective effects?

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

Q44. *[Multiple Choice] · Cognitive Domain: Comprehension*

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

a) independent
b) dependent ✓ correct
c) confound
d) correlational

Q45. *[Multiple Choice] · Cognitive Domain: Comprehension*

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

a) independent ✓ correct
b) dependent
c) confound
d) correlational

Q46. *[Multiple Choice] · Cognitive Domain: Application*

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 ✓ correct
d) dependent variable

Q47. *[Multiple Choice] · Cognitive Domain: Application*

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 ✓ correct

Q48. *[Multiple Choice] · Cognitive Domain: Comprehension*

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

a) correlational study ✓ correct
b) experimental study
c) single–blind procedure
d) open–label study

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Q49. *[Multiple Choice] · Cognitive Domain: Comprehension*

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

a) correlational study
b) experimental study ✓ correct
c) single–blind procedure
d) longitudinal study

Q50. *[Multiple Choice] · Cognitive Domain: Application*

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 ✓ correct
d) 4

Q51. *[Multiple Choice] · Cognitive Domain: Application*

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 nontreated group, what would Jin most likely provide?

a) a different drug
b) a placebo ✓ correct
c) a different dose of the new drug
d) a single–blind design

Q52. *[Multiple Choice] · Cognitive Domain: Comprehension*

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

a) drug
b) placebo ✓ correct
c) teratogen
d) control group

Q53. *[Multiple Choice] · Cognitive Domain: Knowledge*

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 ✓ correct

Q54. *[Multiple Choice] · Cognitive Domain: Application*

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 ✓ correct
d) informed consent documents for the drug

Q55. *[Multiple Choice] · Cognitive Domain: Analysis*

While both single–blind and double–blind procedures prevent a study participant from knowing what a test drug is, single–blind procedures differ from double–blind procedures because single–blind procedures _____.

a) allow researchers to inform their participants which drug they received
b) allow study participants to later choose which drug
c) allow participants in other groups to know which drug they received
d) allow investigators to know which drug participants received ✓ correct

Q56. *[Multiple Choice] · Cognitive Domain: Analysis*

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 ✓ correct
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

Q57. *[Multiple Choice] · Cognitive Domain: Comprehension*

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

a) single–blind procedure
b) double–blind procedure
c) open–label study ✓ correct
d) treatment arm

Q58. *[Multiple Choice] · Cognitive Domain: Knowledge*

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

a) Internal ✓ correct
b) External
c) Construct
d) Confound

Q59. *[Multiple Choice] · Cognitive Domain: Application*

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

a) internal ✓ correct
b) external
c) construct
d) face

Q60. *[Multiple Choice] · Cognitive Domain: Knowledge*

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

a) Face
b) Construct
c) Internal
d) External ✓ correct

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Q61. *[Multiple Choice] · Cognitive Domain: Application*

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 ✓ correct
d) predictive

Q62. *[Multiple Choice] · Cognitive Domain: Analysis*

All of the following impact internal validity except _____.

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

Q63. *[Multiple Choice] · Cognitive Domain: Knowledge*

A substance found harmful for a fetus is called a(n) _____.

a) neurotoxin
b) teratogen ✓ correct
c) embryonic toxin
d) nocebo

Q64. *[Multiple Choice] · Cognitive Domain: Comprehension*

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

a) dependent
b) confound ✓ correct
c) pathological
d) pharmacological

Q65. *[Multiple Choice] · Cognitive Domain: Knowledge*

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

a) Internal
b) Predictive
c) External
d) Face ✓ correct

Q66. *[Multiple Choice] · Cognitive Domain: Application*

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 ✓ correct
b) construct validity
c) predictive validity
d) external validity

Q67. *[Multiple Choice] · Cognitive Domain: Knowledge*

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 ✓ correct
c) internal validity
d) predictive validity

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Q68. *[Multiple Choice] · Cognitive Domain: Application*

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 ✓ correct

Q69. *[Multiple Choice] · Cognitive Domain: Knowledge*

_____ validity addresses how well a model predicts treatment effects.

a) Face
b) Predictive ✓ correct
c) External
d) Construct

Q70. *[Multiple Choice] · Cognitive Domain: Comprehension*

_____ 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 ✓ correct
c) Predictive
d) Constructive

Q71. *[Multiple Choice] · Cognitive Domain: Analysis*

What is not an appropriate reason 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 from 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. ✓ correct

Q72. *[Multiple Choice] · Cognitive Domain: Knowledge*

What do the 3Rs stand for?

a) require, restrict, and reduce
b) refinement, restrict, and reduction
c) replacement, reduction, and refinement ✓ correct
d) refinement, replication, and reduction

Q73. *[Multiple Choice] · Cognitive Domain: Application*

What would be an appropriate response to an Institutional Animal Care and Use Committee's (IACUC) 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. ✓ correct
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.

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Q74. *[Multiple Choice] · Cognitive Domain: Analysis*

Which scenario 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. ✓ correct

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.

Q75. *[Multiple Choice] · Cognitive Domain: Knowledge*

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

a) The 3Rs

b) Internal validity

c) Clinical study report

d) Informed consent ✓ correct

Q76. *[Multiple Choice] · Cognitive Domain: Analysis*

When identifying a disorder to treat during the stages of drug development, which factor would likely not be determined?

a) the size of the population to be treated

b) the likely toxic doses of the test drugs ✓ correct

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

Q77. *[Multiple Choice] · Cognitive Domain: Comprehension*

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

a) drug synthesis

b) clinical trial testing

c) high–throughput screening

d) safety pharmacology ✓ correct

Q78. *[Multiple Choice] · Cognitive Domain: Analysis*

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 ✓ correct

b) to send 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

Q79. *[Multiple Choice] · Cognitive Domain: Analysis*

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. ✓ correct

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Q80. *[Multiple Choice] · Cognitive Domain: Knowledge*

Which Clinical Trial Phase best describes a drug tested at low doses for only a short period of time?

a) Phase 1 ✓ correct
b) Phase 2
c) Phase 3
d) Phase 4

Q81. *[Multiple Choice] · Cognitive Domain: Application*

In a study of reaction time, an experimental drug, labeled Drug A for participants, increased response latency to a stimulus by 1 s. A second drug, Drug B, increased response latency by 2 s. When administered together, response latency increased by 3 s. This can be labeled as a(n) _____.

a) synergistic drug effect
b) nocebo effect
c) additive drug effect ✓ correct
d) placebo effect

Q82. *[Multiple Choice] · Cognitive Domain: Knowledge*

When a combination of drugs produces an effect equivalent to the combined magnitude of each drug alone, we refer to this as a(n) _____.

a) nocebo effect
b) additive drug effect ✓ correct
c) synergistic drug effect
d) stimulant effect

Q83. *[Multiple Choice] · Cognitive Domain: Application*

In a study of reaction time, an experimental drug, labeled Drug A for participants, increased response latency to a stimulus by 1 s. A second drug, Drug B, increased response latency by 2 s. When administered together, response latency increased by 5 s. This can be labeled as a(n) _____.

a) nocebo effect
b) synergistic drug effect ✓ correct
c) additive drug effect
d) placebo effect

Q84. *[Multiple Choice] · Cognitive Domain: Knowledge*

When a combination of drugs produces an effect beyond the sum of each drug's effect alone, we refer to this as a(n) _____.

a) nocebo effect
b) additive drug effect
c) synergistic drug effect ✓ correct
d) stimulant effect

Q85. *[Multiple Choice] · Cognitive Domain: Application*

After providing a dose of *loweritol* for lowering blood pressure, a patient needs to have blood pressure lowered by precisely 4 mmHg more. Which treatment should you administer?

a) a drug that produces a decrease of 4 mmHg and has a synergistic effect with *loweritol*
b) a drug that produces a decrease of 4 mmHg and has an additive effect with *loweritol* ✓ correct
c) a drug that you can convince the patient will lower blood pressure, although the drug is actually physiologically inactive
d) a drug that produces a decrease of 4 mmHg more than *loweritol*

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Q86. *[Multiple Choice] · Cognitive Domain: Analysis*

A study participant filed a complaint to a clinic director stating that he would not have joined the study if he had been told that blood samples would be taken. Based on this information, which scenario presents a potential ethical violation?

a) The clinical director reviewed a complaint.
b) Blood samples may not be required.
c) Informed consent may not have been given. ✓ correct
d) A double–blind study design was not used.

True/False (15)

Q87. *[True/False] · Cognitive Domain: Comprehension*

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

a) True
b) False ✓ correct

Correct answer: False

Q88. *[True/False] · Cognitive Domain: Knowledge*

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

a) True
b) False ✓ correct

Correct answer: False

Q89. *[True/False] · Cognitive Domain: Knowledge*

Researchers use experimental psychoactive drugs entirely as pharmacological tools for understanding brain function and behavior.

a) True ✓ correct
b) False

Correct answer: True

Q90. *[True/False] · Cognitive Domain: Comprehension*

A drug's chemical name is trademarked.

a) True
b) False ✓ correct

Correct answer: False

Q91. *[True/False] · Cognitive Domain: Knowledge*

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

a) True ✓ correct
b) False

Correct answer: True

Q92. *[True/False] · Cognitive Domain: Knowledge*

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

a) True ✓ correct
b) False

Correct answer: True

Q93. *[True/False] · Cognitive Domain: Application*

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.

a) True ✓ correct

b) False

Correct answer: True

Q94. *[True/False] · Cognitive Domain: Knowledge*

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

a) True ✓ correct

b) False

Correct answer: True

Q95. *[True/False] · Cognitive Domain: Knowledge*

Drugs taken together may have addictive or interaction effects.

a) True ✓ correct

b) False

Correct answer: True

Q96. *[True/False] · Cognitive Domain: Knowledge*

For synergistic drug effects, the magnitude of the combined drug effect is the sum of each drug's effect alone.

a) True

b) False ✓ correct

Correct answer: False

Q97. *[True/False] · Cognitive Domain: Application*

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.

a) True

b) False ✓ correct

Correct answer: False

Q98. *[True/False] · Cognitive Domain: Application*

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 in this study was the rating on how the drug felt.

a) True ✓ correct

b) False

Correct answer: True

Q99. *[True/False] · Cognitive Domain: Knowledge*

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

a) True ✓ correct

b) False

Correct answer: True

Q100. *[True/False] · Cognitive Domain: Comprehension*

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

a) True ✓ correct

b) False

Correct answer: True

Q101. *[True/False] · Cognitive Domain: Knowledge*

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

a) True

b) False ✓ correct

Correct answer: False

Essay (20)

Q102. *[Essay] · Cognitive Domain: Comprehension*

What types of knowledge does a psychopharmacologist need to have?

Suggested answer: *Sample response: Psychopharmacologists need to have a combined understanding of several field. The two most obvious ones are pharmacology and psychology. Pharmacology because they must have knowledge about the nervous system and the mechanisms by which drugs affect it. But also, psychology and an understanding of how drugs can affect behavior a reinforcers or conditioned stimuli.*

Q103. *[Essay] · Cognitive Domain: Analysis*

Compare and contrast instrumental drugs with recreational drugs. Provide an example of each.

Suggested answer: *Sample response: Instrumental drugs psychotropic drugs used to treat a disorder. The are called instrumental drugs because they have specified purpose of use. For example, antidepressants are instrumental drugs because they are prescribed to specifically treat a disorder such as depression. Recreational drugs are used by an individual who just wants to experience it effects. Thus, these types of drugs are typically used to obtain a high or other psychoactive affect. Drugs such methamphetamine are considered recreational drugs.*

Q104. *[Essay] · Cognitive Domain: Analysis*

Explain what is meant by drug misuse. Provide an example.

Suggested answer: *Sample response: The distinction between instrumental and a recreational drug lies in its misuse. Instrumental drugs that are misused or used for something other than its intended purpose or abused in some way can become recreational drugs. For example, someone who is prescribed hydrocodone after getting their wisdom teeth removed may start using the drug because they enjoy the way it makes them feel rather than for the intended pain management.*

Q105. *[Essay] · Cognitive Domain: Comprehension*

Explain what a therapeutic index is, how it is calculated, and its limitation.

Suggested answer: *Sample response: A therapeutic index provides information about the distance between therapeutic and toxic levels of a drug. It is calculated by dividing a toxic dose that caused toxicity in 50% of the subjects—referred to as a TD50—and dividing this by a dose that achieved a 50% therapeutic effect—an ED50. The limitation of this index is that it is not to be used to identify safe drugs.*

Q106. *[Essay] · Cognitive Domain: Analysis*

What is the relationship between a drugs potency and its potential for toxicity?

Suggested answer: *Sample response: To understand the relationship between drugs potency and it potential for toxicity we first have to understand what potency means. Potency refers to the amount of drug that must be taken to reach a specific magnitude of effect. Drugs that have high potency will reach effect magnitudes with lower doses compared to drugs with low potency. Thus, the higher the potency of a drug the lower the dose has to be to reach toxic magnitudes.*

Q107. *[Essay] · Cognitive Domain: Application*

Explain what is meant by a drugs additive effect. Provide an example.

Suggested answer: *Sample response: A drugs additive effects refer to the additive sum of two drugs taken together. For example, when taken alone drug A may reduce respiration by 5%, and drug B, also when taken alone, may reduce respiration by 10%. An additive effect would be a reduction in respiration by 15% if taken together.*

Q108. *[Essay] · Cognitive Domain: Application*

Explain what a synergistic drug effect is and provide an example.

Suggested answer: *Sample response: Synergistic drug effects refer to the interaction between two or more drugs that are taken together. Unlike additive effects, synergistic effects occurs when the magnitude of two drugs taken together produce an effect greater than what their additive sum is expected to be. For example, drug A reduces respiration by 6%, and drug B also reduces respiration by 6%. It is expected that when taken together the two drugs would reduce respiration by 12% but if a synergistic effect occurs the magnitude of the two drugs taken together is 20%.*

Q109. *[Essay] · Cognitive Domain: Comprehension*

Discuss the use of subjective effect in psychopharmacological research.

Suggested answer: *Sample response: Subjective effects refer to those drug effects that cannot be directly observed but can be reported by subjects taking the drug. In other words, subjective effects refer to a subject personal experience of the drug's effects, and these can vary widely from subject to subject. Researchers use subjective effects to determine the potential for misuse, or its potential as a recreational drug.*

Q110. *[Essay] · Cognitive Domain: Analysis*

What are the benefits and drawbacks to using open label studies?

Suggested answer: *Sample response: The benefit to open-label studies is that it reduces ethical concerns that may be associated with such a study. For example, using a blind study in cancer research has ethical problems if some of the patients are given a placebo rather than a potentially beneficial cancer fighting drug. Conversely, the downside to open-label studies are a subject knowing what drug they are being given in a study can create its own effects if the subject believes that certain effects may occur.*

Q111. *[Essay] · Cognitive Domain: Analysis*

How does testing new drugs on animals help researchers understand its effect on humans?

Suggested answer: *Sample response: Using animal research to test the effects of drugs provides what is called face validity. Face validity refers to whether a test or measure is actually measuring what it is supposed to. For example, researchers can test a new a pain medication on mice and measure observable effects in its ability to suppress or block pain. Thus, such animal models provide the research with face validity helping researchers determine if a drug should be moved to human clinical trials.*

Q112. *[Essay] · Cognitive Domain: Analysis*

Compare and contrast the following names used to describe psychopharmacology: psychopharmacology, behavioral pharmacology, and neuropsychopharmacology.

Suggested answer: *Sample response: 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*

Q113. *[Essay] · Cognitive Domain: Application*

The book discussed how drugs are described by their manner of use. Describe how marijuana can be used as an example for the different types of use as discussed in the test.

Suggested answer: *Sample response: 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.*

Q114. *[Essay] · Cognitive Domain: Analysis*

Compare and contrast objective and subjective effects. Provide an example for each.

> ***Suggested answer:*** *Sample response: 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.*

Q115. *[Essay] · Cognitive Domain: Analysis*

Explain the difference between single–blind procedure, double–blind procedure, and open–label studies. Provide a rationale for each.

> ***Suggested answer:*** *Sample response: 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 require informing participants which treatment was given.*

Q116. *[Essay] · Cognitive Domain: Application*

A team of researchers developed a new cellular model for a particular eye disease. Provide an explanation as to how face, construct, and predictive validity differ, and indicate how the model could address each type.

> ***Suggested answer:*** *Sample response: 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.*

Q117. *[Essay] · Cognitive Domain: Application*

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.

> ***Suggested answer:*** *Sample response: The 3Rs consist 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 or 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.*

Q118. *[Essay] · Cognitive Domain: Application*

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.

> ***Suggested answer:*** *Sample response: It's important to 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?"*

Q119. *[Essay] · Cognitive Domain: Analysis*

Explain the process as to how drugs start in phase 1 and move through phase 4.

Suggested answer: *Sample response: In phase 1 researchers attempt to identify the disorder to be treated. At this stage researcher are answering questions that relate to the feasibility and profitability of the drug. When these questions are satisfactorily the process move on to phase 2 where chemists then synthesize experimental compounds in a process called drug synthesis. Phase 3 involves biological experimentation by high-throughput screening methods to provide basic biological information about compounds. Results from this screening methods are then sent to chemists and guide synthesis of further compounds. In phase 4 the testing becomes more focused and the researchers begin testing the most promising compounds that came from phase 3. Safety pharmacology is phase 5 and the tests are intended to identify any adverse effects and toxic dose levels. Finally, once the most effective and safest compounds have been identified from the previous phases human clinical trials begin. If these trials turn out positive then regular approval is sought.*

Q120. *[Essay] · Cognitive Domain: Comprehension*

Discuss how clinical trial drug research promotes the creation of drugs that are safe for humans to us.

Suggested answer: *Sample response: Clinical trial research appears to have two fundamental goals. One is to create a drug that is successful for improving outcomes of a specific disease or disorder. And the second is to ensure that the drug is safe for humans. The stages of clinical trials are designed to answer both questions. In the early stages the focus is identifying and selecting out those compounds that appear most harmful while retaining those compounds that display therapeutic properties for further study. In the middle stages, of 3 and 4, researchers continue to investigate the therapeutic effects of the drug compounds and compare those effects against to other standard medical treatments to determine if the benefits go above and beyond those currently used while still monitoring any adverse effect that may become evident. In short, the phases of clinical trials used focused research to create and provide dugs that have the fewest adverse effects and the highest therapeutic effects.*

Q121. *[Essay] · Cognitive Domain: Application*

Explain how you would create a graph to illustrate an additive drug effect and a synergistic drug effect on body temperature changes for two drugs: Drug A (increases temperature by 0.5°C) and Drug B (increases temperature by 0.3°C). Indicate what type of graph you would use, how you would label it, and your findings. The answer must show a label for Drug A and Drug B alone, a label for an additive effect, and a label for a synergistic effect.

Suggested answer: *Sample response: The chart should show degrees on the y-axis and the drugs plotted on the x-axis. Drug A's bar should reach 0.5 and Drug B's bar should reach 0.3. A bar for additive effects should reach 0.8°. A bar for synergistic effects could be anything higher than 0.8°.*