

**MULTIPLE CHOICE**

1. A drug that binds to a receptor and stimulates its function is said to be a(n) \_\_\_\_\_ drug.
- agonist
  - antagonist
  - idiosyncratic
  - pharmacokinetic

ANS: A

Agonist drugs bind to or have an affinity (attraction) for a receptor and cause a particular response.

DIF: 1                      REF: 14                      TOP: AST Core Curriculum X:B:1:b, agonist

2. Which one of the following is *not* used for the classification of drugs?
- Therapeutic action
  - Physiologic action
  - Affected body system
  - Source of origin

ANS: D

Drugs are classified by what they do, what they affect, what they are not, and where they come from.

DIF: 1                      REF: 4                      TOP: AST Core Curriculum X:B:2, therapeutic actions

3. An anticoagulant drug is classified by its
- chemical type.
  - source of origin.
  - physiologic action.
  - therapeutic action.

ANS: D

Therapeutic action describes what the drug does for a patient; in this example, it works against coagulation.

DIF: 1                      REF: 4                      TOP: AST Core Curriculum X:B:2:a, indications

4. Prescriptions must include all of the following information *except*
- name of the drug.
  - patient's social security number.
  - drug dosage.
  - route of administration of the drug.

ANS: B

Prescriptions must include the date, name of the patient, name of the drug, dosage, route of administration, and frequency or time of administration. The patient's social security number will be in the chart but not on a prescription.

DIF: 1                      REF: 5  
TOP: AST Core Curriculum XI:B:2, prescription medications

5. An order for a drug to be given *as needed* is called a \_\_\_\_\_ order.
- standing
  - oral
  - stat
  - PRN

ANS: D

PRN stands for *pro re nata*, which means that the drug may be given as needed.

DIF: 1                      REF: 5                      TOP: AST Core Curriculum XI:D:3:d, PRN

6. What does the abbreviation *sos* mean on a prescription?
- One half
  - Once, if necessary
  - Without
  - As desired

ANS: B

*sos* means *once, if necessary* (see Table 1-3).

DIF: 1                      REF: 5  
TOP: AST Core Curriculum XI:B:2, prescription medications

7. How is an order for a drug to be taken *every 4 hours* indicated on a prescription?

- a. q4h
- b. qid
- c. qod
- d. qs

ANS: A

The *q* means *every*; the actual number of hours is inserted before the *h*, which means *hours*.

DIF: 3

REF: 7

TOP: AST Core Curriculum XI:B:2, prescription medications

8. How is an order for a drug to be given *three times a day* indicated on a prescription?

- a. q3h
- b. hs
- c. qh
- d. tid

ANS: D

*tid* means *three times a day* (see Table 1-4).

DIF: 1

REF: 7

TOP: AST Core Curriculum XI:B:2, prescription medications

9. Which form of drug preparation tends to act more quickly?

- a. Solid
- b. Semisolid
- c. Liquid
- d. Gas

ANS: D

Absorption of drugs given by inhalation is rapid, especially gases such as inhalation anesthetics, because of the huge numbers of capillaries in the alveoli of the lungs.

DIF: 2

REF: 7

TOP: AST Core Curriculum XI:G:1, gas

10. Which one of the following abbreviations indicates an ointment form of a given drug?

- a. gtts
- b. ung
- c. susp
- d. soln

ANS: B

*ung* means *ointment*.

DIF: 1

REF: 8

TOP: AST Core Curriculum XI:G:4, semisolid

11. Which one of the following abbreviations indicates that a drug is to be given orally?

- a. IM
- b. PO
- c. IV
- d. SC

ANS: B

*PO* means *per os* or by mouth.

DIF: 1

REF: 9

TOP: AST Core Curriculum XI:H:4, PO

12. How is a medication administered by any route *except* the mouth?

- a. Systemically
- b. Sublingually
- c. Parenterally
- d. Subcutaneously

ANS: C

The term *parenteral* indicates any route other than the digestive tract.

DIF: 3

REF: 9

TOP: AST Core Curriculum XI:H:1, injection/parenteral

13. Which one of the following terms is the study of the four basic processes of absorption, distribution, metabolism, and excretion in response to drugs?

- a. Pharmacokinetics
- b. Pharmacodynamics
- c. Biotransformation
- d. Sympathomimetics

ANS: A

The study of pharmacokinetics focuses on how the body processes drugs.

DIF: 1

REF: 11

TOP: AST Core Curriculum X:A:2, pharmacokinetics

14. Distribution of drugs within the body is carried out through which one of the following body systems?

- a. Respiratory
- b. Circulatory
- c. Integumentary
- d. Urinary

ANS: B

Once a drug has been absorbed into the bloodstream, it is transported throughout the body by the circulatory system. Drug molecules eventually diffuse out of the bloodstream to the site of action in the process called *distribution*.

DIF: 2                      REF: 12                      TOP: AST Core Curriculum X:A:2:b, distribution

15. The time between the administration of a drug and the first appearance of its effects is called

- a. peak effect.
- b. onset.
- c. duration.
- d. reaction time.

ANS: B

The time between the administration of a drug and the first appearance of effects is called the *onset*.

DIF: 1                      REF: 15                      TOP: AST Core Curriculum X:A:3:a, onset

16. Which group of drugs is known as receptor blockers?

- a. Antagonists
- b. Agonists
- c. Antipyretics
- d. Analgesics

ANS: A

Drugs that bind to a receptor and prevent a response are called *antagonists* (Fig. 1-11). Antagonists are also called *receptor blockers*.

DIF: 2                      REF: 14                      TOP: AST Core Curriculum X:B:1:c, antagonist

17. An expected but unintended effect of a drug is termed a(n) \_\_\_\_\_ effect.

- a. idiosyncratic
- b. adverse
- c. synergic
- d. side

ANS: D

A side effect is a predictable but unintended effect of a drug.

DIF: 1                      REF: 15                      TOP: AST Core Curriculum X:B:3:a, side effects

18. Malignant hyperthermia is a(n) \_\_\_\_\_ effect to certain drugs.

- a. idiosyncratic
- b. adverse
- c. local
- d. side

ANS: A

Most idiosyncratic drug reactions are thought to occur in people with some genetic abnormality, causing either an excessive or an inadequate response to a drug. For example, malignant hyperthermia (see Chapter 16) is a life-threatening response to certain drugs and is attributable to a genetic defect.

DIF: 3                      REF: 16                      TOP: AST Core Curriculum X:B:3:b, adverse effects

19. Which drug form is used the least in the surgical department?

- a. Semisolid
- b. Solid
- c. Liquid
- d. Gas

ANS: B

Solids such as capsules and tablets are rarely used in surgery, because oral administration is required.

DIF: 2                      REF: 7                      TOP: AST Core Curriculum XI:G:3, solid

20. When a drug travels from the site of administration into the bloodstream, it is called

- a. absorption.
- b. distribution.
- c. metabolism.
- d. excretion.

ANS: A

Absorption is the process by which a drug is taken into the body and moves from the site of administration into the blood.

DIF: 2                      REF: 11                      TOP: AST Core Curriculum X:A:2:a, absorption

21. Drugs are chemically altered via a process called *metabolism* in the
- lungs.
  - colon.
  - kidney.
  - liver.

ANS: D

The chemical composition of a drug is changed in the liver by a process called *metabolism* or *biotransformation*.

DIF: 1                    REF: 11                    TOP: AST Core Curriculum X:A:2:c, metabolism

22. Most drugs are excreted and eliminated by the
- lungs
  - colon
  - kidney
  - liver

ANS: C

Some drug molecules are eliminated in the bile, feces, or skin, but most unchanged drugs and metabolites are excreted by the kidneys and eliminated in urine (Fig. 1-10).

DIF: 1                    REF: 11                    TOP: AST Core Curriculum X:A:2:d, excretion

23. A drug that enhances the effect of another drug is called a(n)
- agonist.
  - synergist.
  - antagonist.
  - receptor blocker.

ANS: B

A drug that enhances the effect of another drug is called a *synergist*.

DIF: 1                    REF: 15                    TOP: AST Core Curriculum X:B:1:a, synergist

24. Which one of the following types of drug binds to receptor site proteins and then inhibits a response?
- Agonist
  - Synergist
  - Antagonist
  - Electrolyte

ANS: C

Drugs that bind to a receptor and prevent a response are called *antagonists*.

DIF: 2                    REF: 14                    TOP: AST Core Curriculum X:B:1:c, antagonist

25. The abbreviation *PO* represents which one of the following?
- Intramuscularly
  - Orally
  - Subcutaneously
  - Intravenously

ANS: B

*PO* means *per os* or by mouth.

DIF: 1                    REF: 9                    TOP: AST Core Curriculum XI:H:4, PO

26. The abbreviation *bid* represents which one of the following?
- Twice a day
  - Three times a day
  - Four times a day
  - Immediately

ANS: A

*bid* means *twice a day*.

DIF: 1                    REF: 7  
TOP: AST Core Curriculum XI:B:2, prescription medications

27. The abbreviation *NPO* represents which one of the following?
- Discontinue
  - Immediately
  - Keep vein open
  - Nothing by mouth

ANS: D

*NPO* means *nothing by mouth*.

DIF: 1                    REF: 7  
TOP: AST Core Curriculum XI:B:2, prescription medications

28. A surgical patient is given a drug during surgery and suspects he or she is having a delayed allergic reaction to the drug, several days later. Which symptom indicates that the patient may be having a delayed drug reaction?
- Drowsiness
  - Circulatory collapse
  - Joint swelling
  - Excessive anticoagulation

ANS: C

Delayed drug reactions occur days or weeks after a drug is taken and can include fever and joint swelling.

DIF: 2 REF: 15 TOP: AST Core Curriculum X:B:3:a, side effects

29. All are terms used to describe the body's response or reaction to medications, *except*
- idiosyncratic.
  - contraindication.
  - side effect.
  - hypersensitivity.

ANS: B

A contraindication is a reason against giving a particular drug.

DIF: 1 REF: 15 TOP: AST Core Curriculum X:B:2:b, contraindication

30. What drug is given as an antidote to warfarin?
- Vitamin K
  - Amoxicillin
  - Mannitol
  - Succinylcholine

ANS: A

Vitamin K is given as an antidote for warfarin if the patient has been over-anticoagulated because vitamin K cancels out the effect of warfarin.

DIF: 2 REF: 14  
TOP: AST Core Curriculum XIII:A:3, anticoagulants and fibrinolytics

31. Volatile anesthetic agents are eliminated from the body via
- the kidneys.
  - the skin.
  - the circulatory system.
  - the lungs.

ANS: D

Notable exceptions to urinary excretion are the volatile anesthetic agents, which are excreted by the lungs.

DIF: 2 REF: 13  
TOP: AST Core Curriculum V:I:1:c, Isoflurane; d, Desflurane; e, Sevoflurane

32. Which drug administration route causes many drugs to undergo the "first-pass effect"?
- Sublingual
  - Oral
  - Transdermal
  - Inhalation

ANS: B

Since oral drugs enter the liver through the hepatic portal system, many undergo the first-pass effect, which means they may be altered or nearly inactivated when passing through the liver, potentially reducing the drug's effectiveness.

DIF: 3 REF: 11  
TOP: AST Core Curriculum X:A:2:a, absorption | AST Core Curriculum XI:H:4, oral route

33. Why would a local anesthetic, injected into an infected wound, not produce the intended effect?
- Because the local anesthetic was not strong enough
  - Because the local anesthetic was not absorbed
  - Because the local anesthetic could not reach the site of action
  - Because the local anesthetic could not bind to proteins

ANS: C

When a local anesthetic is injected into an infected wound, the local becomes ionized and cannot enter the lipid membrane of the nerves to reach the site of action. See Insight 1-3.

DIF: 3 REF: 12  
TOP: AST Core Curriculum VI:A:1, Injection | AST Core Curriculum VI:B:1:a, Lidocaine; b, Bupivacaine; c, Mepivacaine

34. How is antibiotic irrigation applied during surgery?

- a. Parenteral
- b. Topical
- c. Inhalation
- d. Emulsion

ANS: B

Topical antibiotic irrigation is common in surgery, in which case an antibiotic solution is poured or squirted into the surgical site.

DIF: 2

REF: 9

TOP: AST Core Curriculum XIII:A:20, irrigation solutions

35. Many antibiotics used in surgery come in \_\_\_\_\_ form and must be reconstituted.

- a. liquid
- b. gas
- c. ointment
- d. powder

ANS: D

Some drugs come in powder form and are contained in glass vials. Such powders must be mixed with a liquid (reconstituted) with sterile water or sodium chloride.

DIF: 1

REF: 7

TOP: AST Core Curriculum IX:D:1, Combining

36. The study of drugs derived from natural sources is called

- a. pharmacology.
- b. biotechnology.
- c. pharmacokinetics.
- d. pharmacognosy.

ANS: D

The study of drugs derived from natural sources is called pharmacognosy.

DIF: 1

REF: 2

TOP: AST Core Curriculum XI:F:1, Plants; 2, Animals; 3, Minerals

37. Demerol is an example of a

- a. synthetic drug.
- b. hormone.
- c. semisynthetic.
- d. natural drug.

ANS: A

Meperidine (Demerol) is an example of a synthetic drug; it is made from chemicals.

DIF: 1

REF: 3

TOP: AST Core Curriculum XI:F:4, Laboratory synthesis

## MATCHING

*Match the following terms with the correct definitions.*

- a. Adverse effect
- b. Bioavailability
- c. Biotechnology
- d. Biotransformation
- e. Side effect

1. Amount of unbound drug molecules able to cause the desired effect
2. Expected but unintended action or effect of a drug
3. Artificial manipulation of segments of DNA (genetic material)
4. Metabolism or breaking down of drug molecules in the liver
5. Undesired, potentially harmful effect of a medication

1. ANS: B                    DIF: 1                    REF: 15  
TOP: AST Core Curriculum X:B:3, effects

2. ANS: E                    DIF: 1                    REF: 12  
TOP: AST Core Curriculum X:B:3:a, side effects

3. ANS: C                    DIF: 1                    REF: 3  
TOP: AST Core Curriculum XI:F:5, biotechnology

4. ANS: D                    DIF: 1                    REF: 13  
TOP: AST Core Curriculum X:A:2:c, metabolism

5. ANS: A                    DIF: 1                    REF: 15  
TOP: AST Core Curriculum X:B:3:b, adverse effects