

Chapter 2. Pharmacokinetics I. Drug Administration, Absorption, and Distribution

Multiple Choice

1. All of the following are parenteral routes of drug administration EXCEPT the \_\_\_\_ route.

- A. oral
- B. inhalation
- C. injection
- D. topical
- E. transdermal

Ans: A

2. The \_\_\_\_\_ effect occurs when drugs are transported initially to the liver where a significant amount of the drug may be metabolized and destroyed before the drug reaches its primary site of action.

- A. malabsorptive
- B. first pass
- C. Bohr
- D. bioequivalence
- E. pharmacodynamic

Ans: B

3. Iontophoresis, phonophoresis, and medicated patches all use the \_\_\_\_ route to administer drugs.

- A. oral
- B. inhalation
- C. injection
- D. transdermal
- E. rectal

Ans: D

4. This first pass effect is of particular concern when drugs are administered

- A. topically
- B. by intravenous injection
- C. by subcutaneous injection
- D. by inhalation
- E. orally

Ans: E

5. The extent to which a drug reaches the systemic circulation is referred to as
- A. bioequivalence
  - B. biotransformation
  - C. bioavailability
  - D. biodistribution
  - E. last pass metabolism

Ans: C

6. When crossing cell membranes, drugs will diffuse more readily through the lipid layer if they are
- A. non-lipid soluble
  - B. in a neutral, nonionized form
  - C. in a charged, ionized form
  - D. large proteins

Ans: B

7. Osmosis refers to the special case of diffusion where the diffusing substance is
- A. a lipid soluble drug
  - B. a non-lipid soluble drug
  - C. a protein
  - D. a carbohydrate
  - E. water

Ans: E

8. Carrier specificity, expenditure of energy, and ability to transport substances against a concentration gradient are all characteristics of
- A. simple, passive diffusion
  - B. facilitated diffusion
  - C. active transport
  - D. endocytosis
  - E. exocytosis

Ans: C

9. A drug that has a volume of distribution of approximately 42 L will typically be
- A. bound extensively to plasma proteins
  - B. retained in the bloodstream
  - C. concentrated in the tissues
  - D. stored in the liver and kidneys

E. distributed uniformly throughout all of the body fluids

Ans: E

10. The primary site for drug storage in the body is

- A. muscle
- B. bone
- C. skin
- D. adipose tissue
- E. the brain

Ans: D

11. Drug developers are exploring nanotechnology (i.e., the use of very small particles with specific physical properties) as a way to

- A. target and deliver drugs to specific tissues within the body
- B. facilitate drug absorption from the GI tract
- C. enable drugs to cross the blood brain barrier more easily
- D. all the above
- E. none of the above

Ans: D.