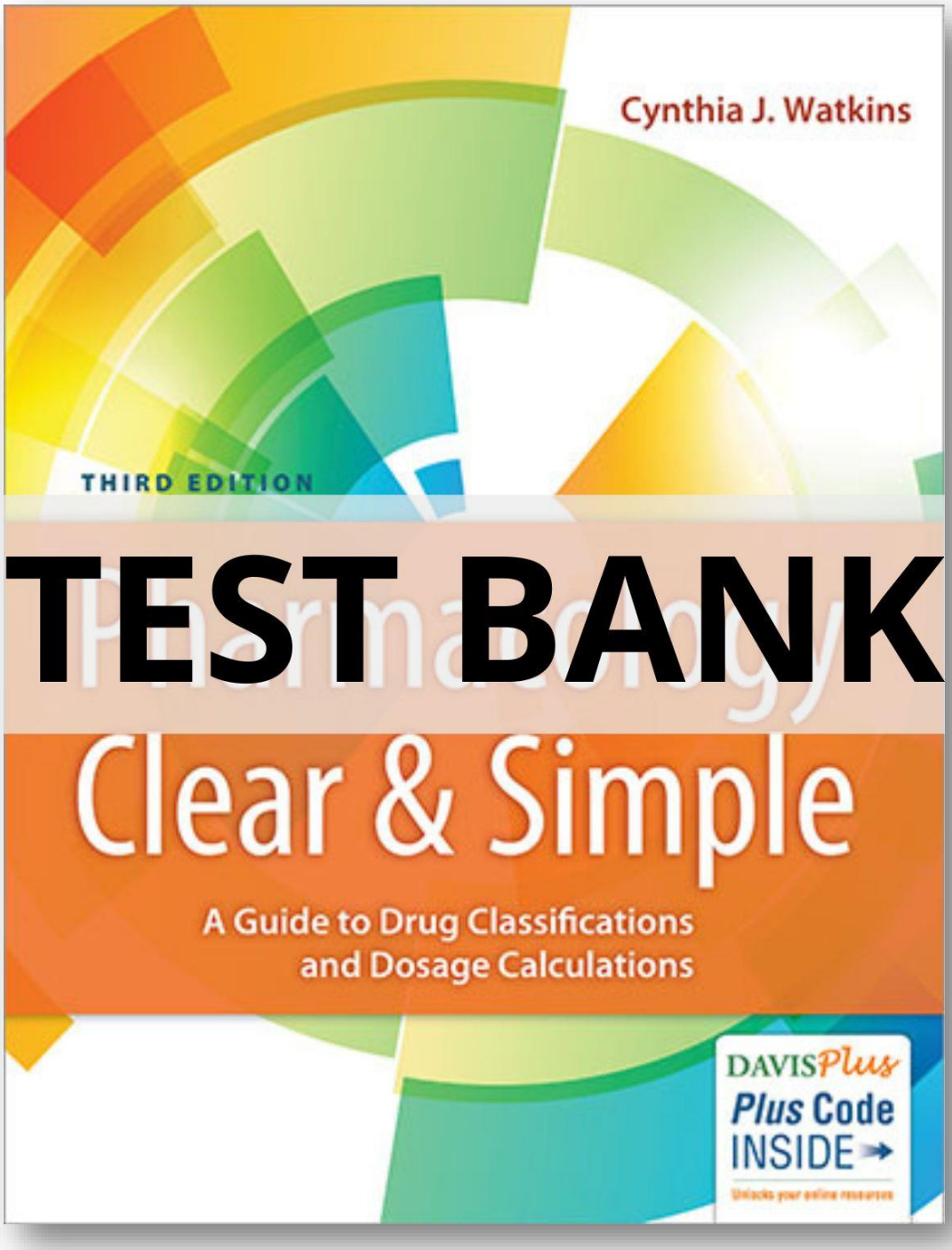
Instructor's Guide + Test Bank For Pharmacology Clear and Simple A Guide to Drug Classifications and Dosage Calculations Nursing Educators 3rd Edition



Instructor's Guide

Chapter 1: History of Pharmacology

STUDENT PREP FOR CLASS

Additional Ideas for Student Preparation	Suggestion
Learning Outcomes	Ask students to review the **Learning Outcomes** noted on the chapter's opening page and to refer back to them as they read the chapter. These outcomes detail foundational underpinnings that every student should understand after completing the chapter content.
Key Terms	As students read through the chapter, instruct students to create flash cards for the chapter's **Key Terms** as they're defined in the chapter. Prior to coming to class, have students use the newly created flash cards to quiz themselves on the chapter's important terminology.
Activities	Have students read the chapter and answer the **Activities** at the end of the chapter. **Answers to the Activities** can be found as a handout at the end of this document. These questions are ideal for reinforcing the knowledge and concepts presented in the chapter, but they are not meant to serve as graded activities.

ACTIVITY AND LESSON PLAN OUTLINE

Topic 1: The History of Pharmacology

Teaching Strategy with Media Reference	Activity and Lesson Content
Lecture (PPT Slides 5-6)	Discuss the history of pharmacology. Origins of words: pharmacology and drug
Lecture (PPT Slides 7-9)	Discuss three societies critical to the development and evolution of pharmacology. China, Egypt, Persia (now Iran)
Clicker Question (PPT Slide 10)	Pause the lecture and ask the students the clicker question on Slide 11.
Clicker Question Rationale (PPT Slide 12)	After giving students time to reply, discuss the correct answer and rationale found on Slide 12.
Lecture (PPT Slide 13)	Discuss pharmacological advances through the 19th and 20th centuries.
Clicker Question (PPT Slide 13)	Pause the lecture and ask the students the clicker question on Slide 13.
Clicker Question Rationale (PPT Slide 14)	After giving students time to reply, discuss the correct answer and rationale found on Slide 14.
Lecture (PPT Slide 15)	Discuss pharmacology in the 21st Century.

Activity	Place students in groups of three to four. Ask each group to come up with as many examples as possible of medications used in the past or currently used in other cultures that have proven to be dangerous or even lethal. (As an example, the textbook notes mercury was used in the late 1700s to treat yellow fever.) Give students time to brainstorm, and then ask each group to elect a representative to read the group's list to the class. Discuss the results as a class. Caution students against listing medical interventions that do not involve medication, such as bleeding, leeches, etc.

Topic 2: Sources of Drugs

Teaching Strategy with Media Reference	**Activity and Lesson Content**
Lecture (PPT Slide 16)	Discuss the five sources of drugs. plants, animals, minerals, toxins, synthetic
Clicker Question (PPT Slide 17)	Pause the lecture and ask the students the clicker question on Slide 17.
Clicker Question Rationale (PPT Slide 18)	After giving students time to reply, discuss the correct answer and rationale found on Slide 18.
Critical Thinking Answers (PPT Slide 19)	Pause the lecture to discuss the questions on Slide 19.

	Question: If people rely on plants for medication, what effect does the increasing human population have on the potential supply of medications? **Answer:** If we don't develop land that could be used to grow plants, we could lose our ability to make medications from these plants, which will cause them to become scarce. **Question:** What are some of the dangers of using toxins as medication? **Answer:** The obvious danger would be that use of the toxin could potentially cause the patient to become very ill. **Question:** What are some of the ethical issues of genetically engineering drugs? **Answer:** Are we playing God by creating substances that aren't naturally occurring in nature? Are we playing God by manipulating genes and altering animal cells? Are we being cruel using animals in the synthesis of drugs?
Activity	Divide the class into five groups. Assign each group one of the five sources of drugs (plants, animals, minerals, toxins, and synthetics). Give each group 5 to 10 minutes to brainstorm the advantages of their source and write them down. Allow a representative of each group to orally present the list of the advantages of their source. When all of the groups have presented, ask the class to engage in a debate to try to

	come to an agreement about which source has the most advantages and the fewest disadvantages. Consider issues such as supply, ethics, cost, dangers/side effects, and efficacy.

Topic 3: Categories of Medication

Teaching Strategy with Media Reference	Activity and Lesson Content
Lecture (PPT Slide 20)	Discuss the categories of medication. curative, prophylactic, diagnostic, palliative, replacement, destructive
Critical Thinking (PPT Slide 21)	Pause the lecture to discuss the questions on Slide 21. **Question:** Identify the following drugs as curative, prophylactic, diagnostic, palliative, destructive, or replacement. **Answer:** Synthroid—*Replacement hormone* Diuretic—*Curative, to reduce edema* Flu vaccine—*Prophylactic, preventative* Radiopaque dye—*Diagnostic* Fever reducer—*Palliative, reduces discomfort, but does not cure* Anticancer drugs—*Destructive, destroy cancer cells*
Clicker Question (PPT Slide 22)	Pause the lecture and ask the students the clicker question on Slide 22.
Clicker Question Rationale (PPT Slide 23)	After giving students time to reply, discuss the correct answer and rationale found on Slide 23.

Topic 4: The Roles of Nurses/Medical Assistants in the Administration of Medications

Teaching Strategy with Media Reference	Activity and Lesson Content
Lecture (PPT Slide 24)	Discuss the roles of the LPN, LVN, and MA in the administration of medications.
Activity	Discuss the concept of scope of practice and the variables that come into play when determining an individual's scope of practice. State laws/regulations Provider's education, experience, and skills Policies of the facility Ask students if they are aware of examples of the rules for scope of practice in their state.

Student Handout — Additional End-of-Chapter Review Questions

Answer Key: Activities

Multiple Choice

1. **A.** Lanolin is derived from sheep's wool.

2. **C.** Potassium chloride is derived from minerals.

3. **B.** Digoxin (Lanoxin) is derived from a plant (foxglove).

4. **E.** Barbiturates are made synthetically.

5. **D.** Humans are the source of leukocytes (white blood cells).

6. **C.** World War II saw the mass production of penicillin.

7. **A.** Genetic engineering is used to create synthetic drugs.

8. **D.** Cows (bovine) and pigs (porcine) were the sources for insulin before synthetic production began.

9. **C.** Toxins (e.g., Botox) are used to treat skin wrinkles.

10. **B.** Premarin is derived from the urine of pregnant horses.

Short Answers

1. Animals may be a good source of medication, because their food sources and lifestyle can be better controlled than those of humans. They can also be continuously monitored for disease, but detection is never 100% safe, so they are a good source, but possibly not the best.

2. The rainforest and rich plant sources are in danger of disappearing because of deforestation.

3. World War II was the catalyst for mass-production of penicillin to try to prevent the massive death toll caused by infection that occurred in previous wars.

4. Alternative medicine should (in my opinion) be used in partnership with traditional medicine, if this is the patient's choice. Patients should not be pushed toward or steered away from them. The

exception would be if there is a known reason to avoid the alternative medicine in question (for example, massage therapy for a trauma patient when there is the potential for doing further damage).

Application Exercises

1. He may have porcine insulin, but it would be against his religious beliefs, unless necessary for life. The physician may choose to prescribe synthetic or bovine insulin instead.

2. Humulin insulin is manufactured using genetic engineering but does not involve the use of stem cells. It is named Humulin because it very closely resembles human insulin.

3. You would further explore aromatherapy in an attempt to discover exactly what Harold is being exposed to, and how. Document any information and make sure the physician is aware of any information that you obtain so that he or she can discuss the therapy with Harold. You SHOULD NOT tell Harold that he should avoid this type of therapy.

4. Raymond is taking a tea made from foxglove (the derivative of digoxin), which may be causing cardiac problems. You should not criticize him but should document the information and advise the physician. The physician may ask you to educate the patient about the effects of digoxin and digoxin toxicity, but it is the physician's role to decide the best way to handle this situation.

Chapter 2: Basics of Pharmacology

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ACTIVITY AND LESSON PLAN OUTLINE

Topic 1: The Drug Cycle

Teaching Strategy with Media Reference	**Activity and Lesson Content**
Lecture (PPT Slide 5)	Define terms: pharmacology, drug