

# Pharmacology



## New for 2022 - 2023

Clarification for the use of zero has been added.  
There will be NO verbal announcements during testing.  
A new edition for the Ford and Roach text has been released.

## Event Summary

Pharmacology provides HOSA members with the opportunity to gain knowledge and skills regarding the area of healthcare concerned with uses, effects, and modes of actions of drugs. This competitive event consists of a written test with a tiebreaker essay question. This event aims to inspire members to learn about drugs action on the body, proper administration, and adaptations for different patients and conditions.

## Sponsorship

This competitive event is sponsored by [CVS Health](#)



## Dress Code

Competitors must be in official HOSA uniform or proper business attire. Bonus points will be awarded for [proper dress](#).

### Competitor Must Provide:

- [Photo ID](#)
- Two #2 lead pencils (not mechanical) with eraser

## General Rules

1. Competitors in this event must be active members of HOSA-Future Health Professionals, in good standing.
2. **Eligible Divisions:** Secondary and Postsecondary/Collegiate divisions are eligible to compete in this event.
3. Competitors must be familiar with and adhere to the "[General Rules and Regulations of the HOSA Competitive Events Program \(GRR\)](#)."
  - Per the [GRRs #11](#) and [Appendix H](#), HOSA members may request accommodation in any competitive event. To learn the definition of an accommodation, please read [Appendix H](#). To request accommodation for the International Leadership Conference, [submit the request form here](#) by May 15 at midnight EST.

- To request accommodation for any regional/state level conferences, please work with your local and state advisor directly. Accommodations must first be done at state in order to be considered for ILC.
4. All competitors shall report to the site of the event at the time designated for each round of competition. At ILC, competitor's [photo ID](#) must be presented prior to ALL competition rounds.

**Official References**

5. All official references are used in the development of the written test.
6. [Moini, Jahangir. \*The Pharmacy Technician: A Comprehensive Approach\*. Cengage Learning, Latest edition.](#)
7. [Ford, Susan and Sally Roach. \*Roach's Introductory Clinical Pharmacology\*. Wolters Kluwer, Latest edition.](#)

**Written Test**

8. [Test Instructions](#): The written test will consist of 100 multiple choice items in a maximum of 90 minutes.
9. **Time Remaining Announcements:** There will be NO verbal announcements for time remaining during ILC testing. All ILC testing will be completed in the Testing Center and competitors are responsible for monitoring their own time.
10. One essay question will be administered with the original test. In case of a tie, the essay question will be judged and used to break the tie.
11. The test plan for Pharmacology is:  
Safety will be integrated throughout the test plan
  - Basic Concepts in Pharmacology..... 12%
  - Career Opportunities in Pharmacology..... 3%
  - Ethical and Legal Responsibilities..... 10%
  - Pediatrics and Geriatrics Adaptations..... 10%
  - Drug Names, Classifications, Action, and Interactions..... 30%
  - Drug Administration..... 20%
  - Drug Measurement, Dosage, Conversions..... 10%
  - Technologies in Pharmacology..... 5%
12. At the International Leadership Conference, HOSA will provide basic handheld calculators (no graphing calculators) for addition, subtraction, division, multiplication and square root calculations.
13. All competitors will receive two 8.5x11" sheets of blank paper to use during testing.
14. **ROUNDING:** Converting between measurement systems will often render a different answer depending upon which systems and conversions are being used. The answer to a calculation problem will ultimately be the same answer after appropriate rounding. When determining a solution, round only the final answer after all calculation steps have been completed.

When rounding decimal numbers to the nearest tenths, hundredths, or thousandths place; look to the immediate right of the digit located in the position to be rounded. If the number to the direct right is 5 or larger, round up one number and drop everything that follows. If the number to the direct right is 4 or smaller, leave the position being rounded as is and drop everything that follows.

In specific situations, answers will be rounded per medical protocol. For example, pediatric dosage is always rounded DOWN to avoid potential overdose. Unless otherwise indicated, all answers should be rounded to the nearest whole number. (Examples: 31.249 (rounded down) = 31 and 23.75 (rounded up) = 24).

15. **USE OF ZERO:** Decimal expressions of less than 1 should be preceded by a zero – “leading zero”. A whole number should never be followed by a decimal point and a zero – “trailing zero”.

16. **Sample Test Questions**

1. What U.S. federal legislation established financial incentives for the development and marketing of drugs for the treatment of rare diseases? (Moini pp 5)
  - A. Amendment to Applications for FDA Approval to Market New Drug
  - B. Drug Regulation and Reform Act of 1978
  - C. Omnibus Budget Reconciliation Act
  - D. **Orphan Drug Act of 1983**
  
2. A client who has been taking salicylates for a long period of time should be watched closely for which of the following adverse reactions? (Ford pp 166)
  - A. **GI bleeding**
  - B. Fever of undetermined origin
  - C. Hypotension
  - D. Diminished urinary output
  
3. Dramamine 25 mg po is ordered for nausea and vomiting. The bottle is labeled 5 mg/4 mL. How many mL will be given per dose? (Moini pp 164-169)
  - A. 16 mL
  - B. **20 mL**
  - C. 40 mL
  - D. 50 mL

$$\begin{aligned} \text{Solution} \quad & 5 \text{ mg}/4 \text{ mL} = 1.25 \text{ mg/mL} \\ & 25 \text{ mg/dose} \times 1 \text{ mL}/1.25\text{mg} = 20 \text{ mL/dose} \end{aligned}$$

**Final Scoring**

17. The competitor should write his/her answer to the tiebreaker essay question on the tiebreaker page of the test that remains attached to the original test.
  
18. Final rank is determined by the test score. In case of a tie, the essay question will be used to determine the rank.