



Virginia Board of Pharmacy Examination Study Guide

Provided by Schroeder Measurement Technologies



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Virginia Pharmacy Technician Exam Study Guide

Introduction:

The Virginia Pharmacy Technician Examination (“Exam”) was developed as an objective means of measuring pharmacy technicians’ knowledge of basic job responsibilities as required by Virginia law. The purpose of this Study Guide is to help pharmacy technicians prepare for the Exam. This Study Guide includes: (1) a description of the content areas covered on the Exam and the relative weight given to each area; (2) a list of key words to help prepare for the exam; (3) a list of selected statutes and regulations affecting pharmacy technicians in Virginia; (4) a list of acronyms and extensions that are used on the exam; (5) information about registering for the Exam; (6) information about exam scoring and reporting; and (7) information about maintaining registration.

To earn registration as a Pharmacy Technician in Virginia a candidate must:

1. Successfully complete a Virginia Board of Pharmacy recognized training program.
2. Register for the Exam.
3. Take and pass the Exam.
4. Complete an online Pharmacy Technician Registration Application at:
<https://www.license.dhp.virginia.gov/apply/>

1. TOPICS COVERED ON THE EXAM

The Exam consists of 60 questions administered in one hour. As with many standardized tests, this Exam contains a few questions that are being pretested for possible use on future exams. Pretesting additional questions is necessary to assure that all new questions perform properly. Therefore, 54 of the 60 questions will be scored. All 54 scored items have been accepted by a panel of Pharmacy Technician experts approved by the Virginia Board of Pharmacy. The pretest items will not be identified for the candidate in order to assure that test statistics are valid. A scaled passing score of 75 or greater is needed to pass.

As with most standardized tests, there are multiple versions of this Exam. The various versions are carefully equated to assure that all have equivalent degrees of difficulty.

Questions on the Exam can be divided into 6 categories as detailed in the full Examination Content Outline below. All questions on the Exam link back to this content outline.

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Virginia Pharmacy Technician Content Outline

Domain I: General Pharmacy Laws (15%) 8 items + 1 Pretest Item

- A Legal Agencies
 - 1 Identify agencies affecting pharmacies
 - a. Drug Enforcement Administration (DEA)
 - b. Food and Drug Administration (FDA)
 - c. Virginia Board of Pharmacy
 - d. National Association of Boards of Pharmacy (NABP)
 - e. Centers for Medicare & Medicaid Services (CMS)
 - 2 Identify main bodies of laws affecting pharmacy
 - a. United States Code
 - b. Code of Federal Regulations
 - c. The Virginia Pharmacy Act and The Drug Control Act with Related Statutes
 - d. Virginia Regulations Governing the Practice of Pharmacy
 - e. Virginia Laws and Regulations that pertain to the Prescription Monitoring Program (PMP)
 - f. Health Insurance Portability and Accountability Act (HIPAA) (e.g., confidentiality, disclosure of protected health information, patient's rights)
 - g. Omnibus Budget Reconciliation Act (OBRA) '90
 - h. United States Pharmacopeia and National Formulary (USP-NF)
- B Legal Restrictions
 - 1 Understand the duties that may be performed by the pharmacy technicians
 - 2 Understand acts restricted to a pharmacist (such as accepting oral prescriptions, counseling patients, possessing the alarm code and key)
- C Pharmacy Technician Registration
 - 1 Registration renewal requirements
 - 2 Complete approved (qualifying) continuing education
 - 3 Provide the Board with personal contact information (e.g., name change, address of record)

Domain II: Drug Identification (25%) 14 items + 1 Pretest item

- A Understand the various types of dosage forms
- B Understand the information on a manufacturer's drug package
- C Understand Drug schedules
 - 1 Understand laws regarding use of drug schedules
 - 2 Identify schedules of drugs
- D Identify the generic and trade names of the drug
- E Identify Look-alike/sound-alike medications
- F Demonstrate knowledge of common safety strategies (e.g., tall man lettering, separating inventory, limit use of error prone abbreviations)

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Domain III: Dispensing Process (30%) 16 items + 1 Pretest item

- A Understand the requirements for prescriptions (e.g., required information, allowable conditions)
 - 1 Written
 - 2 Oral
 - 3 Electronic
 - 4 Facsimile
 - 5 Tamper-resistant
- B Process Refill Request
 - 1 Understand regulations governing refills of various drug schedules
 - 2 Understand regulations governing partial refills of various drug schedules
- C Identify the professions that may prescribe medications and any prescribing limitations
- D Understand restricted and specialty drug programs and related prescription-processing requirements (e.g., thalidomide, isotretinoin, clozapine)
- E Translate prescription abbreviations and symbols
- F Perform calculations
 - 1 Understand the systems of measurements used in pharmacies
 - a. Apothecary
 - b. Metric
 - c. Household
 - 2 Convert from one unit of measurement to another
 - 3 Calculate dosage based on:
 - a. information supplied on prescription (e.g., percentage, ratio)
 - b. patient's weight
 - 4 Calculate the amount of a drug for a compounded drug product
 - 5 Calculate the dispense quantity and days supply
- G Understand the use of therapeutically-equivalent drug products
- H Recognize elements of a prescription label
- I Understand prescription containers and closures
 - 1 Understand the various types of prescription containers (e.g., vials, bottles, ointment jars)
 - 2 Understand the use of child-resistant closures
- J Perform compounding
 - 1 Recordkeeping requirements (e.g., sterile, non-sterile)
 - 2 Sterile compounding
 - a. Recognize prescriptions for sterile compounding
 - b. Understand aseptic technique (e.g., non-hazardous, hazardous)
 - 3 Non-sterile compounding
 - 4 Storage requirements and beyond-use dating
- K Use of automated counting devices
- L Recognize third-party payors (e.g., government programs, worker's compensation, HMO, PPO)

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Domain IV: Other Regulated Sales and Record Keeping (10%) 6 items + 1 Pretest item

- A Understand correct procedures regarding other regulated sales
 - 1 Schedule V drugs
 - 2 Paraphernalia
 - 3 Pseudoephedrine
 - 4 Dextromethorphan to minors
 - 5 Insulin
 - 6 Naloxone
- B Understand record maintenance requirements (e.g., chronological order, length of storage/retention)
 - 1 Prescriptions
 - 2 Invoices
 - 3 Daily dispensing log
 - 4 Off-site storage
 - 5 Confidentiality, maintenance, release and destruction of records

Domain V: Knowledge of Alternative Drug Delivery Systems (10%) 5 items + 1 Pretest item

- A Unit dose
 - 1 Identify the facilities that may use unit dose carts
 - 2 Understand the use and functions of unit dose carts
- B Repackaging
 - 1 Understand labeling requirements
 - 2 Understand recordkeeping requirements
- C Automated devices for dispensing
- D Understand stat-drug boxes and emergency drug kits

Domain VI: Drug Storage and Inventory Management (10%) 5 items + 1 Pretest item

- A Drug Storage
 - 1 Understand storage temperature ranges (e.g., room, cold and freezer temperatures)
 - 2 Identify drugs with specific storage requirements (e.g., Schedule II, chemotherapy and biologic agents)
- B Inventory Management
 - 1 Understand requirement for biennial inventory
 - 2 Understand inventory concepts (e.g., stock rotation, expiration date, par levels, drug recalls)
 - 3 Understand the requirements for perpetual inventory for Schedule II drugs

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2. KEY WORDS

Following is a list of key words that you should know for each of the major areas listed above. While this is not represented as an exhaustive list of every term you should know, knowing each of these terms and the related concepts may help you prepare for the Exam. You may find it helpful to make a list of definitions for words and terminology that may be new to you.

Technician Duties and General Information

Confidentiality	Food and Drug Administration (FDA)
Consumer Product Safety Commission (CPSC)	Over the counter (OTC) drugs
Controlled Substances Act (CSA)	Pharmacy security
Drug Enforcement Administration (DEA)	Pharmacy Technician duties
United States Pharmacopeia (USP)	

Dosage Forms

Aerosols	Chewable tablets
Capsules	Controlled-released products
Creams	Otic preparations
Parenteral medications	Reconstituting
Emulsions	Solutions
Enteric-coated tablets	Sublingual tablets
Gels	Suppositories
Lotions	Suspensions
Ointments	Syrups
Ophthalmic preparations	Transdermal patches

Prescription Containers and Closures

Applicator bottles	Closures
Child-resistant caps	Dropper bottles

Generic Substitution

Brand-name drugs	Generic drugs
Brand Medically Necessary	Multiple-source drugs

Information on Prescription Stock Bottle Labels

Controlled substance mark	Lot number
Expiration date	National Drug Code (NDC) number
Prescription-only symbol (Rx)	Stock bottle label
Legend Statement	

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Controlled Substances

DEA number	Schedule IV (C-IV)
Emergency prescriptions	Schedule V (C-V)
Filing prescription forms	Schedule VI (C-VI)
Partial filling	Schedule V records log
Refilling prescriptions	Storing prescription stock
Schedule I (C-I)	Transfer warning statement
Schedule II (C-II)	Transferring medications
Schedule III (C-III)	Transferring prescriptions

Receiving Prescriptions

Facsimile prescriptions	Transferred prescriptions
Oral Prescriptions	Electronic prescriptions

Interpreting Directions for Use

aa or āā	disp	NKA	qod
aa	DTD	noc	Rx
ac	EC	NR	☒
ad	el or elix	od	SA
ad lib	expect	oj	SC, subQ, or SQ
aff	fl	ophth	Sig
AM	fl oz	os	SL
ANX	g or gm	otic	SOB
app	gr	ou	sol
aq	gtt(s)	oz	SR
aq	h, hr or ^o	p	ss or ☒☒
as	HA	pc	stat
ASAP	HBP	pc & hs	supp
au	hs	ped	susp
BC	IM	PM	syr
bid	IV	po	T or tbsp
BP	kg	pr	t or tsp
c or ☒	L	prn	tab(s)
cap(s)	LA	pulv	tid
cc	loc	q	tinc
cpd or cmpd	lot	qd	TR
cr	mcg or μg	qh	UD or ut dict
d	mEq	q4h	ung or oint
DAW	mg	qhs	vag
dis	ml	qid	w or wk

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Calculations

Apothecary system	Kilogram (kg)
Household measures	Liter (L)
Cubic centimeter (cc)	Metric system
Dram (dr or ℥)	Microgram (mcg)
Fluid dram (℥)	Milligram (mg)
Fluid ounce (fl oz or ℥)	Milliliter (mL)
Gallon (gal)	Ounce (oz)
Grain (gr)	Pint (pt)
Gram (g)	Quart (qt)

Patient Interaction

Calls technicians can handle	Calls technicians cannot handle
Questions technicians may answer	Questions technicians may not handle

Federal Privacy Requirements

Acknowledgement signature	Covered entity
Notice of privacy practices	Protected health information
Privacy officer	
Health Insurance Portability and Accountability Act (HIPAA)	

The Dispensing Process

Automatic counting machines	Medication history
Auxiliary labels	Meniscus
Computer checks	NDC number
Conical graduate	Over-the-counter (OTC) medications
Contraindications	Patient profiles
Counting trays	Prescription form requirements
Daily log	Prescription history
Distilled water	PRN refills
Drug interactions	Reconstituting powders
Gelatin capsules	Reconstituting tube
Graduated cylinder	Refill regulations
Hypodermic needle and syringe log	Schedule V sales record log
Label requirements	

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Alternative Drug Distribution Systems

24-hour exchange	Medication cart
7-day exchange	Patient drawer or tray
Back-up dose	Punch card
Blister pack	Repackaging
Compliance aids	Returning unused medication
Dosage spoon	Unit-dose system
Dropper	USP-NF Class B packaging materials
Long-term care facility (LTCF)	USP-NF Class C packaging materials
Lot or control number	

Sterile Product Compounding

Ampule	High efficiency particulate air (HEPA) filter
Aseptic technique	Horizontal-laminar flow hood
Biological safety cabinet	Intramuscular (IM)
Biomedical waste disposal	Intravenous (IV)
Chemotherapy (cytotoxic drugs)	Labeling requirements
Clean room	Large-volume parenteral
Compounding	Multiple-dose vial
Dextrose 5% in water (D5W)	Parenteral medications
Diluent	Gloved fingertip testing
Filter needle	Sterile product risk levels
Route of administration	Sharps
Subcutaneous (SubQ, SQ or SC)	United States Pharmacopeia (USP)
Small-volume parenteral	Total parenteral nutrition (TPN)
Sterile drug products	Vertical laminar-flow hood
Media-fill testing	

3. SELECTED STATUTES AND REGULATIONS

Following is a list of selected statutes and regulations that you should know for the Exam. This should not be considered to be a comprehensive list of all statutes and regulations that you should know as a pharmacy technician. Explanations of these statutes and regulations should be a part of the various Board-approved training programs. In addition, the text for each of these statutes and regulations is available from the Virginia Board of Pharmacy's website (www.dhp.virginia.gov/pharmacy).

Regulations

18VAC 110-20-170	Required minimum equipment
18VAC 110-20-200BCD	Storage of drugs, devices, and controlled paraphernalia
18VAC 110-20-240	Manner of maintaining record, prescriptions, inventory records
18VAC 110-20-255	Other dispensing records
18VAC 110-20-270	Dispensing of prescriptions, acts restricted to pharmacists; certification of completed prescriptions

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18VAC 110-20-275	Delivery of dispensed prescriptions
18VAC 110-20-280	Transmission of a prescription by facsimile machine
18 VAC 110-20-285	Electronic Transmission of prescriptions from prescriber to pharmacy
18VAC 110-20-290	Dispensing of Schedule II drugs
18VAC 110-20-320	Refilling of Schedule III through VI prescriptions
18VAC 110-20-330	Labeling of prescriptions as to content and quantity
18VAC 110-20-350	Special packaging
18VAC 110-20-355	Pharmacy repackaging of drugs; records required; labeling requirements
18VAC 110-20-360	Issuing a copy of a prescription that can be refilled
18VAC 110-20-370	Issuing a copy of a prescription that cannot be refilled
18VAC 110-20-400	Returning of drugs and devices

Statutes

§ 54.1-3320	Acts restricted to pharmacists
§ 54.1-3404	Persons required to keep records of drugs; contents and form of record
§ 54.1-3408	Professional use by practitioners
§ 54.1-3408.03	Dispensing of therapeutically equivalent drug products
§ 54.1-3408.01	Requirements for prescriptions
§ 54.1-3410	When pharmacist may sell and dispense drugs
§ 54.1-3410.2	Compounding; pharmacists; authority to compound under certain conditions; labeling and record maintenance requirements
§ 54.1-3411	When prescriptions may be refilled
§ 54.1-3412	Date of dispensing; initials of pharmacist; automated data processing system
§ 54.1-3416	No prescriptions for preparations listed pursuant to Schedule V
§ 54.1-3427	Dispensing drugs without safety closure container
§ 54-1-3467	Distribution of hypodermic needles or syringes, gelatin capsules, quinine or any of its salts
§ 54.1-3468	Conditions to dispense device, item, or substance; records

4. ACRONYMS and EXTENSIONS

Below please find a list of the Acronyms and their extensions that you are responsible for knowing. The Acronyms may appear on the Exam.

Acronym	Extension	Acronym	Extension
CDC	Centers for Disease Control and Prevention	CMS	Center for Medicare and Medicaid Services
DEA	Drug Enforcement Administration	FAX	facsimile
FDA	Food and Drug Administration	HIPPA	Health Insurance Portability and Accountability Act
ISMP	Institute for Safe Medication Practices	NDC	National Drug Code
PMP	Prescription Monitoring Program	TPN	Total Parenteral Nutrition
USP	United States Pharmacopeia	WHO	World Health Organization
PTCB	Pharmacy Technician Certification Board	REMS	Risk Evaluation and Mitigation Strategies

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5. REGISTERING FOR THE EXAM

You may take the Virginia Pharmacy Technician Exam at any of the conveniently located Iso-Quality Testing Centers throughout Virginia as well as throughout the United States and the District of Columbia. To find a site near you, go to the Iso-Quality Testing website at www.isoqualitytesting.com. Click on Take a Test, and Locate a Testing Center. Note: The address of the testing site location will be provided once your registration is complete.

To register, open your browser to www.isoqualitytest.com:

- Click on “Exam Registration”
 - Select “VA Pharmacy Technician” from the Organizations drop-down menu
 - Select “VA Pharmacy Technician” from the Exam drop down menu
 - Click “Next”
- On the Login Screen, Click “Register”
 - Enter all the applicable information and click “Next”
- Select a Testing Site, Date, and Time
 - The VA Pharmacy Technician exam is offered at over 200 sites throughout the United States and Canada. Based on the postal/zip code you provide, the five closest Testing Centers to your location will be shown.
 - Select a Testing Center, test date and time for the examination.
 - Click “Next.”
- The examination fee is \$75.50. Enter your credit card information and click “Next”
- Agree to the Iso-Quality Testing Examination Agreement terms by checking the box. Click “Submit.”
- Do not bring a calculator, scratch paper, or any other materials to the Testing Center. The testing system includes a pop-up calculator, and scratch paper and a pencil will be provided.
- **Important – Print, read and save the resulting Admission Letter. You must bring the Admission Letter with you to the Testing Center and must present it along with a government-issued photo ID in order for you to be allowed to take the examination. No exceptions will be made.**

Applying for Special Accommodations:

The Board grants reasonable accommodations for candidates with documented disabilities, in compliance with the Americans with Disabilities Act. If special assistance or arrangements are required, a request for accommodations must be made by the candidate directly to the Virginia Board of Pharmacy. Supporting documentation of the disability as required in Board regulation shall be provided for consideration.

Candidates requesting accommodations may be contacted by the Board to discuss the disability and requested accommodation. In conference with a psychometrician, with consideration of examination security and examination administration guidelines, a reasonable accommodation will be made at no additional cost to the candidate. Candidates will be notified in writing of the accommodations to be offered.

If you believe you qualify for a special testing accommodation under the Americans with Disabilities Act (ADA), please call the Virginia Board of Pharmacy at 804-367-4456.

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6. EXAM SCORING

Examination scores are reported using a scaled score in order to maintain a consistent scaled reporting passing score for all examinations regardless of the form or version given. To successfully pass the examination a candidate must earn a scaled score of 75 or better.

Exam results for successful candidates. The Exam is scored immediately and successful candidates are given an official report by Iso-Quality Testing after completing the Exam indicating that they passed the Exam. Candidates may use this report to provide evidence to the Virginia Board of Pharmacy that they passed the Exam. The Board verifies all passing scores with Schroeder Measurement Technologies.

Exam results for unsuccessful candidates. The purpose of the Exam is to provide summative assessment (i.e., to determine whether an individual has achieved a certain level of competency). It is not designed for formative assessment (i.e., to give the candidate feedback). Schroeder Measurement Technologies does, however, provide diagnostic reports to help unsuccessful candidates focus their study time so they can successfully retake the Exam. This diagnostic report will indicate how the candidate performed on each main content area of the Exam. Candidates who do not pass the Exam will be allowed to retake the Exam after two weeks. Since there are multiple versions of the Exam, candidates who take retake the Exam will receive a different, but equivalent, Exam version.

Scoring. The pass/fail cut score is determined using criterion-referenced method that allows the performance of each candidate taking the examination to be judged against a predetermined standard. Candidates are not compared to fellow candidates, nor are scores graded on a curve. If all candidates taking the examination are competent, all will pass; if none are competent, none will pass. The predetermined standard is set by a committee of subject-matter experts working with testing experts to ensure the validity, reliability, and legal defensibility of the examination. A post-examination administrative review of the validity of the examination scores is routinely applied.

Appeals and rescoring. Errors in computer scoring are extremely rare, since keys (correct answers) are validated before the Exams are used in the Test Centers, and candidate responses are automatically scored against test keys. Nevertheless, candidates who wish to appeal their test results are allowed to do so by completing an Exam Appeal Form available on the SMT Virginia Pharmacy Technician website at <http://www.smttest.com/vapt/documents/ExamAppealForm.pdf> and remitting a nominal examination review fee. Furthermore, candidates wanting to challenge specific questions may also do so using the Exam Appeal Form. In both cases, appeals and challenges must be transmitted to SMT within ten (10) days of the Exam administration. You will be notified of the results of your inquiry within ten (10) business days of receipt.

7. OBTAINING and MAINTAINING YOUR REGISTRATION

Once you have passed the examination, to apply for registration as a pharmacy technician please visit <https://www.license.dhp.virginia.gov/apply/>. The fee for registration is \$25 and proof of completion of a Board approved training program must be submitted along with the application.

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Pharmacy Technician registrations expire on December 31st of each year. The renewal fee for this registration is \$25. At the time of renewal of registration you must attest to having completed the required continuing education to maintain the registration.

A minimum of 5 hours of continuing education credits are required to renew the registration. These continuing education credits must be either ACPE-approved, a Category 1 Continuing Medical Education (CME) course that the primary focus of which is pharmacy, pharmacology or drug therapy or a course that is approved by the Board in accordance with 18VAC110-20-100.

IMPORTANT – To receive credit for ACPE-approved courses, you must have signed up for and obtained an e-profile ID number through CPE Monitor, a program maintained by NABP. For more information please visit www.nabp.net and sign up for CPE Monitor. Failure to provide this e-profile ID number to providers of ACPE-approved courses might mean that you do not receive credit for taking these continuing education courses.

Please also note that some national certifications have different requirements for continuing education. It is up to the pharmacy technician to ensure that they are meeting the Board requirements for continuing education associated with their registration as well as any other national certifications that may have continuing education requirements to meet.

The Board randomly audits registrants each year for their continuing education credits. If you have any questions about continuing education for your pharmacy technician registration please call the Board at 804-367-4456 or email at pharmbd@dhp.virginia.gov.

Appendix A

Schedule of drugs

SCHEDULE II:

GENERIC NAME	SOME BRAND NAMES
hydrocodone	Tussionex [®] , Vicodin [®] , Lortab [®]
morphine sulfate	M.S. Contin [®] , Roxanol [®]
oxycodone	Percocet [®] , OxyContin [®]

SCHEDULE III:

GENERIC NAME	SOME BRAND NAMES
codeine in combination with acetaminophen	Tylenol [®] with codeine #2, #3, #4
testosterone	AndroGel [®]

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SCHEDULE IV:

GENERIC NAME	SOME BRAND NAMES
diazepam	Valium [®]
lorazepam	Ativan [®]
alprazolam	Xanax [®]
temazepam	Restoril [®]
zolpidem	Ambien [®]
tramadol	Ultram [®]

SCHEDULE V:

GENERIC NAME	SOME BRAND NAMES
most cough syrups containing codeine	Robitussin AC [®]
diphenoxylate	Lomotil [®]
pregabalin	Lyrica [®]

SCHEDULE VI:

GENERIC NAME	SOME BRAND NAMES
digoxin	Lanoxin [®]
amoxicillin	Amoxil [®]
pantoprazole	Protonix [®]
lidocaine	Xylocaine [®]
oxybutynin	Ditropan, Oxytrol [®]

Appendix B

Top 200 Brand Drugs

<http://www.drugs.com/top200.html>

or

<http://www.pharmacytimes.com/publications/issue/2013/July2013/Top-200-Drugs-of-2012>

Appendix C

Examples of professions that may prescribe drugs and acronyms

Dentist (DDS or DMD)

Physician (MD)

Nurse practitioner (NP) with prescriptive authority

Physician assistant (PA)

Optometrist (OD)

Podiatrist (DPM)

Osteopathic physician (DO)

Veterinarian (DVM)