PHARMACY TECHNICIAN
LESSONS, FALL 2019

Sam Blakemore, PharmD, MBA
WWW.SAMBLAKEMORE.COM
# Table of Contents

- **Lesson 1 Part 1** ................................................................. 3
- **Lesson 1 Part 2** ................................................................. 4
- **Lesson 1 Part 3** ................................................................. 7
- **Lesson 1 Homework** .......................................................... 8
- **Lesson 2** ........................................................................... 9
- **Lesson 2 Homework** .......................................................... 12
- **Lesson 3 Part 1** ................................................................. 13
- **Lesson 3 Part 2** ................................................................. 15
- **Homework Lesson 3** ........................................................... 16
- **Lesson 4 Part 1** ................................................................. 17
- **Practice Quiz 1** ................................................................. 19
- **Lesson 4 Homework** ........................................................... 30
- **Lesson 5 Part 1** ................................................................. 31
- **Lesson 5 Part 2** ................................................................. 32
- **Lesson 5 Part 3** ................................................................. 36
- **Practice Quiz 2** ................................................................. 37
- **Practice Quiz 3** ................................................................. 47
- **Lesson 5 Homework** ........................................................... 53
- **Lesson 6 Part 1** ................................................................. 54
- **Lesson 6 Part 2** ................................................................. 56
- **Lesson 6 Homework** ........................................................... 64
- **Practice Final Exam** ............................................................ 65
Lesson 1 Part 1

a. How to Become a Pharmacy Technician

What tasks do Pharmacy Technicians perform? What is their Role and Responsibility? Is this the right career choice for you?

Source: https://www.bls.gov/ooh/healthcare/pharmacy-technicians.htm

b. Title 34 -- Pharmacy Practice Act

Source: http://www.albop.com/PDF%20Files/act205_08.pdf

Title 34-23-130

c. Requirements to be a Registered Pharmacy Technician in the State of Alabama

Source: http://www.albop.com/PDF%20Files/Alabama%20Pharmacy%20Technicians%20Rules.pdf

d. How to Become a Certified Pharmacy Technician

Source: https://www.ptcb.org/docs/default-source/get-certified/Guidebook.pdf?sfvrsn=69
Lesson 1 Part 2

Memorize

1. What website is used to apply to be a pharmacy technician in the State of Alabama?

   **Answer:** [www.albop.com](http://www.albop.com)

2. How many Pharmacy Technicians can be in a Pharmacy if there is 1 Pharmacist?

   **Answer:** 3 Technicians to 1 Pharmacist --- but only if 1 of the 3 Technicians is Certified

3. How many days do you have to notify the State Board of Pharmacy after a change in employment?

   **Answer:** 10

4. Explain the difference between a controlled substance and non-controlled substance?

   **Answer:** Both (controlled and non-controlled) are legend drugs. Legend drugs are drugs requiring a prescription. An over the counter (OTC) medication does not require a prescription – examples include Tylenol and Zyrtec.

5. A behind the counter (BTC) medication requires additional information from the consumer --- such as State Identification. What is an example of a BTC medication?

   **Answer:** Pseudoephedrine

6. Technicians renew their licenses in _____ years?

   **Answer:** Odd

7. Pharmacies and Pharmacists renew their licenses in _____ years?

   **Answer:** Even

8. In the State of Alabama accept a new phone in prescription from a prescriber -- Yes or No?

   **Answer:** No
9. Can a Pharmacy Technician counsel patients on their medications – Yes or No?

   Answer: No
Lesson 1 Part 3

Review Content

1. Answers to Good Questions from lecture 1 (Pharmacy Technician Question and Answers)
   http://www.albop.com/PDF%20Files/FAQ%202012.pdf

2. Pharmacy Technicians FAQ’s from ALBOP
   http://www.albop.com/FAQ.aspx#Technicians

3. How to complete the Pharmacy Technician Application

4. Show Proof of US Citizenship with Application
   http://www.albop.com/PDF%20Files/Citizen%20Checklist.pdf

5. How to track your Continuing Education
   http://www.albop.com/Continuing_Education.aspx


7. Pharmacy Related Web Sites from ALBOP
   http://www.albop.com/Pharmacy_Links.aspx
Lesson 1 Homework

1. Read the Pharmacy Technician Sixth Edition page 48-77

2. Complete “Explain Why” from the Pharmacy Technician Workbook, found on page 11 for Lesson 1 homework credit. Type your answers, Single Space, Times New Roman and email to sam@pedsrx.com, janiece@pedsrx.com, and rikkitadunkschpt@gmail.com. Subject Line in email “Explain Why_Lesson 1”

3. Type a paragraph describing why you want to be a Pharmacy Technician. Single Space, Times New Roman and email to sam@pedsrx.com, janiece@pedsrx.com, and rikkitadunkschpt@gmail.com. Subject Line in email “Why_Lesson 1”
Lesson 2

A. Federal Law vs. State Law

Federal Regulation of Pharmacy Practice guided by rules implemented by the Food and Drug Administration (FDA) and the Drug Enforcement Agency

For purposes of examination remember Food Drug and Cosmetic Act (FDCA) in 1938 establishes the safety, efficacy, and quality of drugs and medical devices; food, cosmetics, and dietary supplements; and products that give off radiation

Drug Enforcement Agency established in 1973 as part of Controlled Substance Act of 1970.

State Law of Pharmacy Practice regulated by State Board of Pharmacy

Question: Which law do you follow?
The stricter of the two sets of laws (Federal Law vs. State Law)

B. Professional Standards of Pharmacy Practice

American Society of Health System Pharmacists (ASHP) – Pharmacists practicing in Institutional settings (hospitals, long term care facilities)

The Joint Commission – Accredits institutional settings (hospitals, nursing homes, etc.)

C. Pharmaceutical Compounding Standards

Standards are set by the following Regulations
USP 795 – Non sterile compounding
USP 797 – Sterile compounding
USP 800 – Standards for handling hazardous drugs

The importance of proper sterile compounding - https://youtu.be/PdAXB2Z76E4
New England Compounding Center – 48 deaths due to contaminated products with fungal meningitis

D. Review Drug Regulation Timeline

Key Regulations that are found on examinations include:
Food and Drug Act of 1906 – prohibits interstate commerce in adulterated or misbranded food, drinks and drugs
1938 Food, Drug, and Cosmetic Act – all new drugs must be proven safe

1951 Durham-Humphrey Amendment – Two classes of drugs (legend drugs versus OTC)
1962 Kefauver Harris Amendment – all new drugs must be both safe and effective

1970 Poison Prevention Packaging Act – requirement of childproof packaging on controlled and most prescription drugs, non-childproof containers may be used when patient or prescriber requests one.

1970 Controlled Substance Act – DEA established; five classes of controlled substances established based on potential chance of patient becoming addicted to medication

Schedule I = high potential for abuse and no accepted medical use
Schedule II = high potential for abuse with physical or psychological dependence Schedule 3 = potential for abuse less than schedule 1 and II
Schedule IV = drugs with low potential for abuse
Schedule V = drugs with low potential for abuse in relation to Schedule IV

1996 Health Insurance Portability and Accountability Act – health information needs to be maintained with responsibility. Effective security to maintain privacy of health information.

2005 Combat Methamphetamine Epidemic Act – Establishes strict controls on OTC sales of Pseudoephedrine, Ephedrine, and Phenylpropanolamine (3.6 g per day, 9 g per month, 7.5 g if mail order)

CMEA EDUCATION - https://www.youtube.com/watch?v=Pqvy1kf5A3A

E. New Drug Approval

Phase 1 – 20 -100 (small group) of healthy participants
Phase 2-100 or more participants with the Disease State or Symptoms
Phase 3- Several hundred to several thousand (large group) participants to monitor effectiveness
Phase 4 – Post Marketing Surveillance, drug on market and FDA continues to monitor if drug should stay on the market

F. Prescription Label
Alabama Board of Pharmacy Law: http://www.albop.com/FAQ.aspx#Labeling

G. Drug Recalls

Class 1 – drug will cause serious adverse effects or death
Class 2 – temporary but reversible adverse effects

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Class 3 - product not likely to cause adverse effects

**H. Controlled Substance**

Alabama Board of Pharmacy
http://www.albop.com/FAQ.aspx#Prescriptions_ControlledSubstances
Lesson 2 Homework

1. Read Chapter 2

2. Read Chapter 3

3. Complete “Explain Why” page 28 of the Pharmacy Technician Workbook and email to sam@pedsrx.com, janiece@pedsrx.com, and rikkitadunkschpt@gmail.com. Subject Line in email Explain Why „Lesson 2”
Lesson 3 Part 1

1. Community Pharmacy

   Fun FACT: 2/3 of all prescription drugs in the United states are dispensed by community pharmacies.

   Types of Community Pharmacies: Independent Pharmacies owned by individuals, Chain Pharmacies (CVS, Walgreens), Mass Merchandiser (Walmart, Costco), Food store Pharmacies (Publix, Kroger’s)

   Example of an Independent Pharmacy: https://youtu.be/fjo2rNzAovo

2. Customer Service

   Customer Service is critical component to providing good pharmaceutical care
   Please take the time out to review this video: https://youtu.be/Cb24f-6q0ik

3. The Patient Profile

   Remember what is needed on a Patient Profile:
   Name, DOB, Address, Allergies to Medications, Insurance Information

4. Entering Prescription Information

   Find the correct patient profile then enter the following: Correct Drug and Strength, Quantity to Dispense, Directions, Refills Prescribed, Prescriber

5. Refills, Partial Fills, Transfers, Filing

   Refills- Prescriptions for non-controlled drugs can be refilled for up to 1 year from the date the prescription was written

   i. Schedule 3-5 controlled substances- can be refilled for up to six months from the date prescription was written

   ii. Schedule 2 controlled substances- cannot be refilled

   iii. Partial Fills- Review “Partial Fills” on page 552 in its entirety

   iv. Transfers – Review “Transfers” on page 553 in its entirety. State of Alabama a controlled substance Schedule 3-5 prescription can be transferred once. Schedule 2 prescriptions cannot be transferred. Non-controlled substances have unlimited
transfers – but it is best for patient care that transfers are minimal. This ensures continuity of care for the patient.

v. Filing of Hard Copy- Review “Filing” on page 553 in its entirety. Schedule 2 prescriptions filed separately from schedule 3-5 and non-controlled

6. Review “Some Common OTC Drugs and Their Use” page 565

Know the brand vs. generic names, example Benadryl is the brand name of Diphenhydramine

7. National Drug Codes

Identifies the product, and in the following format: 54321-5432-54
Total of 11 numbers
The first five numbers represent manufacturer
The middle four numbers represent the drug and strength
The last two numbers represent the package size

8. SIG CODES to begin memorizing

Frequency
QD= everyday BID= twice daily TID= three times daily QID= four times daily QHS= at bedtime

Route of Administration
PO= by mouth PR= per rectum
OU= both eyes OD= right eye OS= left eye
AU= both ears AD= right ear AS= left ear

PRN = as needed
SOB = shortness of breath

9. Mathematical Conversions
1 gram = 1 mL
1 ounce = 30mL
1 tsp = 5 mL
1 tbsp = 15mL
Lesson 3 Part 2

1. Prescription Processing
   Remember that prescription processing has this general workflow to ensure patient safety by increasing efficiency and reducing the chance of error

2. Retail Pharmacy Workflow
   Drop off of Rx → Order Entry → Filling → Verification → Pickup

3. Institutional Pharmacy Workflow
   Physician Order Entry → Pharmacist Verification of Order Entry → Filling → Pharmacist Verification → Medication Pickup

4. Remember to go over your Common Abbreviations
   Once you go over those abbreviations take an online practice quiz:

   What information is found on a written prescription
   Name and Address of Patient
   Date
   Drug Name and Strength and Quantity
   Instructions
   Prescriber (MD, CRNP, PA, DDS, OD, DPM) – Prescribers NPI and/or DEA

5. How does a forged prescription look?
   [https://youtu.be/_S0V9DNaDjg](https://youtu.be/_S0V9DNaDjg)
   [https://youtu.be/cQexfK2iWU8](https://youtu.be/cQexfK2iWU8)

6. A good video for why it is important to check DEA numbers and recognize forged prescriptions:
   [https://youtu.be/5kcYMryB3ZI](https://youtu.be/5kcYMryB3ZI)
Homework Lesson 3

1. Read Chapter 16

2. Read Chapter 7

3. Review Lesson 3

4. Review Top 200 In Pharmacy Workbook
Lesson 4 Part 1

A. Review Pharmacy Math

Problems and Answers

1. Orapred 15mg/5ml dispense quantity 30ml
   Directions: 1 tbsp qd
   What is day’s supply? ___2________

   Answer: 1 tbsp = 15ml qd = everyday thus 30ml/15ml/day = 2 days

2. Amoxicillin 400mg/5ml dispense quantity 100ml
   Directions: 1 tsp bid
   What is day’s supply? ___10________

   Answer: tsp = 5ml bid = twice daily thus 100ml/10ml/day = 10 days

3. Cefdinir 125mg/5ml dispense 50ml
   Directions: 1 tsp qd
   What is day’s supply? ___10________

   Answer: tsp = 5ml qd= daily thus 50ml/5ml/day

4. Norvasc 10mg dispense 30 tablets
   Directions: 1 tab po qd
   What is day’s supply? ___30________

   Answer: Po = by mouth qd = daily thus 30 tabs/1 tab/day

5. Augmentin 875mg dispense 20 tablets
   Directions: 1 tab po bid
   What is day’s supply? ___10________

   Answer: Po = by mouth bid=twice daily thus 20 tabs/2tabs/day

6. Amoxicillin 500mg dispense 21 capsules
   Directions: 1 cap po tid dental infection
   What is day’s supply? ___7________

   Answer: Tid = 3 times per day 21 caps/3 caps/day
7. Lantus 100units/ml dispense 3ml  
   Directions: 10 units qhs  
   What is day’s supply? ___30_______
   
   100 units/ml x 3ml = 300 units per vial/10 units per day

8. Cyproheptadine 4mg/5ml dispense 300ml  
   Directions: 1 tsp po bid  
   What is day’s supply? ___30_______
   
   Answer: tsp = 5ml bid = twice daily thus 300ml/10ml/day

9. Acyclovir 400mg dispense 28 tablets  
   Directions: 1 tab po qid  
   What is day’s supply? ___7_______
   
   Answer: qid = 4 times per day 28 tabs/4 tabs/day

10. ProAir HFA dispense 1 inhaler (inhalers have 200 puffs)  
    Directions: 2 puffs q4h prn cough and wheeze  
    What is day’s supply? ___16 or 17_______
    
    Answer: q4h means the patient can take up to 6 times per day 24 hours/4= 6 times
    
    2 puffs x 6 /day = 12 puffs/day thus 200 puffs/12 puffs/day = 16.6, you can round down or round up.
Lesson 4
Part 2

Practice Quiz 1

John Hoover, MD
789 West Main St
Birmingham, AL 35255
DEA: FH1234563

Name: Jason Jones DOB: 12/06/1972 Allergies: NKA
Address: 1700 Glen Circle Birmingham, AL 35226 Date: 04/01/2019

RX
Lisinopril 10mg  #30
1 T PO QD
#11 refills

Dispense as Written _______ Product Selection Permitted

1. What is the strength of the Lisinopril tablet?
   A. 10mg
   B. 20mg
   C. 30mg
   D. 40mg

2. What quantity of tablets has the prescriber directed the pharmacist to dispense per month?
   A. 10
   B. 20
   C. 30
   D. 90

3. How many refills are on this prescription?
   A. 3
   B. 6
   C. 9
   D. 11

4. How many tablets in total are on this prescription?
A. 30
B. 90
C. 330
D. 360
5. PO means?
   A. By Mouth
   B. Per Rectum
   C. Left Ear
   D. Right Ear

6. QD means?
   A. Every Day
   B. Every Month
   C. Every Year
   D. Every Week

7. When will this prescription expire?
   A. 3 months
   B. 6 months
   C. 9 months
   D. 12 months

John Hoover, MD
789 West Main St
Birmingham, AL 35255
DEA: FH1234563

Name: Jackson Smith DOB: 01/12/2012 Allergies: Amox Wt.: 22lbs
Address: 1568 Cove Ln Birmingham, AL 35211 Date: 05/01/2019

Amoxicillin 400mg/5ml #100mL’s
1 tsp PO BID #0 refills

Dispense as Written _______ Product Selection Permitted

8. What is the concentration of the Amoxicillin (W/V or weight/volume)_CF
   a. 200mg/5mL
   b. 250mg/5mL
   c. 400mg/5mL
   d. 600mg/5mL
9. What is 1 tsp equivalent to?
   a. 5mL
   b. 10mL
   c. 15mL
   d. 20mL

10. BID means?
    a. Once Daily
    b. Twice Daily
    c. Three Times Daily
    d. Four Times Daily

11. What quantity does the prescriber want the pharmacist to dispense?
    a. 50mL
    b. 100mL
    c. 150mL
    d. 200mL

12. What is the day’s supply for this prescription?
    a. 5 days
    b. 7 days
    c. 10 days
    d. 14 days

13. What website is used to apply to be a Pharmacy Technician in the State of Alabama?
    a. Albop.com
    b. Ncbop.com
    c. Gabop.com
    d. Msbop.com

14. How many days do you have to notify the State Board of Pharmacy after a change in employment?
    a. 1
    b. 5
    c. 7
    d. 10

15. Technicians renew their license in ____ years?
    a. Even
    b. Odd
    c. Annual
    d. Leap
16. Pharmacists and Pharmacies renew their license in ____ years?
   a. Even
   b. Odd
   c. Annual
   d. Leap

17. In the State of Alabama Pharmacy Technicians can accept phone in prescriptions?
   a. True
   b. False

18. In the State of Alabama Pharmacy Technicians can counsel patients about their prescriptions?
   a. True
   b. False

19. In the State of Alabama you enter the pharmacy and there is one Pharmacist on duty. How many Pharmacy Technicians can be in the pharmacy?
   a. 1
   b. 2
   c. 3
   d. 4

20. In the State of Alabama how many grams of pseudoephedrine can be sold per month?
   a. 1.2 grams
   b. 2.4 grams
   c. 3.6 grams
   d. 7.5 grams

21. USP Chapter 795 sets the standards for?
   a. Non-sterile compounding
   b. Sterile compounding
   c. Hazardous compounding
   d. Drug manufacturing

22. USP Chapter 797 sets the standards for?
   a. Non-sterile compounding
   b. Sterile compounding
   c. Hazardous compounding
   d. Drug manufacturing

23. USP Chapter 800 sets the standards for?
   a. Non-sterile compounding
   b. Sterile compounding
   c. Hazardous compounding
   d. Drug manufacturing
24. The deaths of patients with fungal meningitis because of the New England Compounding Center establishes the importance of USP Chapter _____?
   a. 795
   b. 797
   c. 800
   d. 1160

25. In 1906, The Food and Drug Act established...
   a. Prohibits interstate commerce in adulterated or misbranded food, drinks, and drugs
   b. All new drugs must be proven safe
   c. Two classes of drugs, over the counter (OTC) and prescription (Rx)
   d. All new drugs must be both safe and effective

26. In 1938, The Food Drug and Cosmetic Act established...
   a. Prohibits interstate commerce in adulterated or misbranded food, drinks, and drugs
   b. All new drugs must be proven safe
   c. Two classes of drugs, over the counter (OTC) and prescription (Rx)
   d. All new drugs must be both safe and effective

27. The Durham – Humphrey Amendment established...
   a. Prohibits interstate commerce in adulterated or misbranded food, drinks, and drugs
   b. All new drugs must be proven safe
   c. Two classes of drugs, over the counter (OTC) and prescription (Rx)
   d. All new drugs must be both safe and effective

28. The Kefauver Harris Amendment established...
   a. Prohibits interstate commerce in adulterated or misbranded food, drinks, and drugs
   b. All new drugs must be proven safe
   c. Two classes of drugs, over the counter (OTC) and prescription (Rx)
   d. All new drugs must be both safe and effective

29. The Controlled Substance Act establishes...
   a. A requirement of childproof packaging on prescription & over the counter drugs, household chemicals, and hazardous materials
   b. Ensures health information is kept private and secure
   c. Establishes strict controls on OTC sales of pseudoephedrine, ephedrine, and phenylpropanolamine
   d. Establishes five classes of controlled substance established based on potential chance of patient’s becoming addicted to medication
30. The Poison Prevention Packaging Act established…
   a. A requirement of childproof packaging on prescription & over the counter drugs, household chemicals, and hazardous materials
   b. Ensures health information is kept private and secure
   c. Establishes strict controls on OTC sales of pseudoephedrine, ephedrine, and phenylpropanolamine
   d. Establishes five classes of controlled substance established based on potential chance of patient’s becoming addicted to medication

31. The Health Insurance Portability and Accountability Act established…
   a. A requirement of childproof packaging on prescription & over the counter drugs, household chemicals, and hazardous materials
   b. Ensures health information is kept private and secure
   c. Establishes strict controls on OTC sales of pseudoephedrine, ephedrine, and phenylpropanolamine
   d. Establishes five classes of controlled substance established based on potential chance of patient’s becoming addicted to medication

32. The Combat Methamphetamine Epidemic Act established…
   a. A requirement of childproof packaging on prescription & over the counter drugs, household chemicals, and hazardous materials
   b. Ensures health information is kept private and secure
   c. Establishes strict controls on OTC sales of pseudoephedrine, ephedrine, and phenylpropanolamine
   d. Establishes five classes of controlled substance established based on potential chance of patient’s becoming addicted to medication

33. Which statement represents Phase 4 of new drug approval?
   a. 20-100 healthy participants receive drug
   b. 100 or more healthy participants with disease receive drug
   c. Several hundred to several thousand participants with diseases receive drug
   d. Post marketing surveillance of drug to monitor outcomes and issues of taking medication

34. Which statement represents Class 1 drug recalls?
   a. Drug will cause serious or adverse effect
   b. Drug will cause temporary but reversible adverse effect
   c. Drug will not likely to cause adverse effect
   d. Drug will never cause adverse effect

35. Schedule 3-5 prescriptions can be refilled how many times in a six month period from the date written?
   a. 0
   b. 3
   c. 6
   d. 11
36. Schedule 2 prescriptions can be refilled how many times in a six month period from the date it was written?
   a. 0  
   b. 3  
   c. 6  
   d. 11  

37. A controlled substance that is Schedule 3-5 can be transferred how many times?
   a. 0  
   b. 1  
   c. 2  
   d. 3  

38. National Drug Codes have a total of ____ numbers?
   a. 4  
   b. 5  
   c. 9  
   d. 11  

39. The first five numbers of a National Drug Code (NDC) 54321-4321-21 represent?
   a. Manufacturer  
   b. Drug and strength  
   c. Package size  
   d. Lot  

40. The middle four numbers of a National Drug Code (NDC) 54321-4321-21 represent?
   a. Manufacturer  
   b. Drug and strength  
   c. Package size  
   d. Lot  

41. The last two numbers of a National Drug Code (NDC) 54321-4321-21 represent?
   a. Manufacturer  
   b. Drug and strength  
   c. Package size  
   d. Lot  

42. OU means  
   a. Both Eyes  
   b. Right Eye  
   c. Left Ear  
   d. Right Ear  

43. OD means  
   a. Both Eyes  
   b. Right Eye  
   c. Left Ear  
   d. Right Ear
44. OS means
   a. Both Eyes
   b. Right Eye
   c. Left Eye
   d. Right Ear

45. AU means
   a. Both Ears
   b. Right Eye
   c. Left Ear
   d. Right Ear

46. AD means
   a. Both Eyes
   b. Right Eye
   c. Left Ear
   d. Right Ear

47. AS means
   a. Both Eyes
   b. Right Eye
   c. Left Ear
   d. Right Ear

48. PRN means as needed
   a. True
   b. False

49. SOB means short of breath
   a. True
   b. False

50. 1 ounce = ____ mL
    a. 5mL
    b. 10mL
    c. 15mL
    d. 30mL

51. 1 teaspoon (tsp) = ____ mL
    a. 5mL
    b. 10mL
    c. 15mL
    d. 30mL
52. 1 tablespoon (tbsp) = ___ mL
   a. 5mL
   b. 10mL
   c. 15mL
   d. 30mL

53. The prescription reads Cyproheptadine 4mg/5ml dispense 300ml directions: 1 tsp po bid. What is the day’s supply?
   a. 7
   b. 15
   c. 21
   d. 30

54. The prescription reads. Acyclovir 400mg dispense 28 tablets directions: 1 T po qid. What is the day’s supply?
   a. 7
   b. 15
   c. 21
   d. 30

55. The prescription reads. ProAir HFA dispense 8.5 grams (1 inhaler or 200 puffs) directions: 2 puffs q6h pm cough, wheeze, sob. What is the day’s supply?
   a. 7
   b. 15
   c. 25
   d. 30

56. The prescription reads. Norvasc 10mg tablet dispense 30 tablets. Directions: Take 1 T po qd. What is the day’s supply?
   a. 7
   b. 15
   c. 25
   d. 30

57. The prescription reads. Lantus 100units/ml dispense 1 vial (3mL). Directions: Inject 10 units subq qhs. What is the day’s supply?
   a. 7
   b. 15
   c. 28
   d. 30
58. The prescription reads. Flovent 110mcg inhaler dispense 12 grams (120 puffs). Directions: 2 puffs Q12H. What is the day’s supply?
   a. 7
   b. 15
   c. 25
   d. 30

59. The prescription reads. Mercaptopurine 50mg tablet dispense 15 tablet. Directions: 1 T po qd Mon-Sat and 1.5 T po on Sunday. What is the day’s supply?
   a. 7
   b. 14
   c. 25
   d. 30

60. The prescription reads. Methotrexate 2.5mg tablet dispense 21 tablets. Directions: 7 tabs po q Thursday. What is the day’s supply?
   a. 7
   b. 15
   c. 21
   d. 30
Lesson 4 Homework

1. Review Lesson 4 Days Supply

2. Review Lesson 4 Quiz
Lesson 5 Part 1

A. How do we come up with names of drugs?

United States Adopted Name Council (USAN)- The assignment of a drug to a drug class is proposed when the sponsor of the drug makes an application to the USAN council for an adopted name.

Please review Stems and Classes on page 419 – reviewing these stems will help you learn the pharmacological classes of drugs.

B. Classification of drugs

Drugs can be classified by their effects on --- a DISORDER, a BODY SYSTEM, TYPE of RECEPTOR acted on, TYPE of ACTION

C. Agonists vs. Antagonist

Agonists activate receptors while Antagonists block receptors

An example of an Antagonists is a BETA BLOCKER – like the drug PROPRANOLOL
An example of an Agonist is a BETA AGONIST – ALBUTEROL

D. Drug example of Agonist vs. Antagonist

Example of Antagonist: Propranolol main effect is to non-selectively block beta receptors in the body. There are beta receptors in the heart -- thus there is a decrease in the person’s heart rate and blood pressure.

Example of Agonist: Albuterol main effect is to relax smooth muscle by action on the beta 2 receptor.

The gist is that Propranolol Blocks the Beta Receptor while Albuterol Activates the Beta Receptor

E. Understanding the Mechanism of Action of a drug helps us figure out how to appropriately classify a drug

Decrease Pain – NSAIDS, Opiates
Anti-infectives – Antivirals, Antibiotics, Antifungals
Decrease Blood Pressure and Heart Rates – Beta Blockers, Antihypertensives
Please continue to review pg. 421, reading over this page will help you begin understanding classification by a drug’s MECHANISM of ACTION in the body.

F. In the workbook please review the Top 200 Most Prescribed Drugs by Classification on pages 268-273

Notice how you can begin learning these drugs by focusing on the Classification – Mechanism of Action of the drug in the body

Classification/Generic Name/Brand Name

Lesson 5 Part 2

A. Measurement

Please review conversions on page 155 and 156 page 194 and 195

Frequently used conversions in community pharmacy are as follows:

1 kg = 2.2 lbs
1 fl oz = 30 ml
1 tsp = 5 ml
1 tbsp = 15 ml
1 pt = 16 fl oz

B. Calculations

A prescription reads as follows:

Baby Girl Roberts 22 lbs NKA (No Known Allergies)
Cefdinir 125 mg/5 ml
Give 1.2 tsp po qd for 10 days
Dispense 2 ounces

i. Convert dispensed quantity from ounces to ml

ii. What is Baby Girl Robert’s dose in mg is this dose appropriate for her weight? (In pediatrics dosing is often dependent upon the child’s weight)
iii. Convert the weight of Baby Girl Roberts from pounds to kg

iv. Convert Baby Girl Roberts dose from tsp to ml

v. Calculate Day’s Supply

**A prescription reads as follows:**

Janet Jackson  
Amoxicillin 500mg  
1 PO TID for 7 days  
qs (quantity sufficient)

i. What quantity should be dispensed and why

ii. Is there any information about Janet Jackson missing on this prescription that the Pharmacy Technician should ask?

**A prescription reads as follows:**

Henry Ford NKA (No Known Allergies)  
Magic Mouthwash (equal parts Lidocaine/Benadryl/Nystatin)  
Swish and spit 1 tablespoon qid  
qs (quantity sufficient) 10 days

i. What quantity should be dispensed and why

ii. How should the product be compounded? And why?
A prescription reads as follows:

Jim Doe NKA (No Known Allergies)
Acyclovir 4% ointment compounded
Qs 30 grams petrolatum

i. You have Acyclovir 400mg tablets on the shelf, how would you compound this product?

ii. This problem is an example of weight to weight

C. Alligation
   Let’s review the example from page 185 together
Lesson 5 Part 3

A. Insurance: Understand the concepts of “Processing Information”

Review of Insurance Cards: https://youtu.be/oSHuo6fxybY
BIN Number/Group Number/PCN/ID
What is a Pharmacy Benefit Manager?

B. Reconstitution:

1. What is reconstitution

2. Let’s watch the following video to understand reconstitution better: https://youtu.be/sit0oHbZ4Cg

C. Express an appropriate Community Pharmacy Workflow in the diagram below using the terms drop off, order entry, filling, pickup, and verification?

_________ → _____________ → __________ → ___________ → _______________

Please watch the following video: https://youtu.be/SCWIIbrRVLg
Practice Quiz 2

1. Duragesic is an analgesic drug. It most commonly comes as a patch that is applied to the skin and removed every 72 hours. Oftentimes, it is used in patients with cancer. What is the generic name of Duragesic?
   a. Hydrocodone/APAP
   b. Fentanyl
   c. Morphine
   d. Tramadol

2. Ultram is an analgesic drug. It most commonly comes as a 50mg tablet. What is the generic name of Ultram?
   a. Fentanyl
   b. Morphine
   c. Tramadol
   d. Hydrocodone/APAP

3. Motrin is an analgesic drug. It is commonly referred to as a non-steroidal anti-inflammatory (NSAID). It most commonly comes as a 200mg tablet and purchased frequently as an over the counter (OTC) medication. What is the generic name of Motrin?
   a. Acetaminophen
   b. Ibuprofen
   c. Celecoxib
   d. Meloxicam

4. Mobic is an NSAID. It commonly is used to treat rheumatoid arthritis. It comes as a 7.5mg and 15mg tablet. What is the generic name of Mobic?
   a. Acetaminophen
   b. Ibuprofen
   c. Celecoxib
   d. Meloxicam

5. Vicodin and/or Norco is classified as an opiate. It is a synthetic derivative of a naturally occurring substance found in opium poppy seeds. What is the generic name of Vicodin and/or Norco?
   a. Fentanyl
   b. Morphine
   c. Tramadol
   d. Hydrocodone/APAP

6. MS Contin is classified as an opiate. It is a schedule II narcotic. What is the generic name of MS Contin?
   a. Fentanyl
   b. Morphine
c. Tramadol
d. Hydrocodone/APAP

7. Amoxil is an antibiotic. What is the generic name of Amoxil?
   a. Amoxicillin
   b. Cephalexin
   c. Clindamycin
   d. Cefdinir

8. Omnicef is an antibiotic. What is the generic name of Omnicef?
   a. Amoxicillin
   b. Cephalexin
   c. Clindamycin
   d. Cefdinir

9. Doryx is an antibiotic. What is the generic name of Doryx?
   a. Doxycycline
   b. Amoxicillin
   c. Levofloxacin
   d. Cefdinir

10. Levaquin is an antibiotic. What is the generic name of Levaquin?
    a. Doxycycline
    b. Amoxicillin
    c. Levofloxacin
    d. Cefdinir

11. Bactroban is a topical antibiotic. What is the generic name of Bactroban?
    a. Doxycycline
    b. Amoxicillin
    c. Levofloxacin
    d. Mupirocin

12. Macrobid is an antibiotic used for urinary tract infections. What is the generic name of Macrobid?
    a. Nitrofurantoin
    b. Penicillin
    c. Sulfamethoxazole, trimethoprim
    d. Fluconazole

13. V-Cillin K is an antibiotic. What is the generic name of V-Cillin K?
    a. Nitrofurantoin
    b. Penicillin
    c. Sulfamethoxazole, trimethoprim
    d. Fluconazole
14. Bactrim is an antibiotic. Frequently it is referred to as either Bactrim DS (double strength) or Bactrim SS (single strength). What is the generic name of Bactrim?
   a. Nitrofurantoin
   b. Penicillin
   c. Sulfamethoxazole, trimethoprim
   d. Fluconazole

15. Zovirax is an antiviral. It is frequently used to treat herpes infections. What is the generic name of Zovirax?
   a. Acyclovir
   b. Valacyclovir
   c. Famciclovir
   d. Valganciclovir

16. Valtrex is an antiviral. It is frequently used to treat herpes infections. What is the generic name of Valtrex?
   a. Acyclovir
   b. Valacyclovir
   c. Famciclovir
   d. Valganciclovir

17. Coreg is a beta blocker. It is a cardiovascular agent used to decrease heart rate. What is the generic name of Coreg?
   a. Carvedilol
   b. Clopidogrel
   c. Warfarin
   d. Metoprolol

18. Plavix is an anticoagulant. It is a cardiovascular agent that is used to thin the blood. What is the generic name of Plavix?
   a. Carvedilol
   b. Clopidogrel
   c. Warfarin
   d. Metoprolol

19. Coumadin is an anticoagulant. On occasion you will have a patient refer to it as rat poison. It is used to thin the blood. What is the generic name of Coumadin?
   a. Carvedilol
   b. Clopidogrel
   c. Warfarin
   d. Metoprolol
20. Lipitor is an antihyperlipidemic medication. This means that it lowers high cholesterol in the patient’s body. What is the generic name of Lipitor?
   a. Atorvastatin
   b. Pravastatin
   c. Lovastatin
   d. Rosuvastatin

21. Pravachol is an antihyperlipidemic medication. This means that it lowers high cholesterol in the patient’s body. What is the generic name of Pravachol?
   a. Atorvastatin
   b. Pravastatin
   c. Lovastatin
   d. Rosuvastatin

22. Bystolic is a beta blocker and is classified as an antihypertensive/cardiovascular medication. What is the generic name of Bystolic?
   a. Metoprolol
   b. Nebivolol
   c. Atenolol
   d. Carvedilol

23. Norvasc is a calcium channel blocker and is classified as an antihypertensive/cardiovascular medication. What is the generic name of Norvasc?
   a. Amlodipine
   b. Nifedipine
   c. Labetalol
   d. Propranolol

24. Lotensin is an ace-inhibitor and acts on enzymes in the kidney to lower blood pressure. It is classified as an antihypertensive/cardiovascular medication. What is the generic name of Lotensin?
   a. Benazepril
   b. Enalapril
   c. Lisinopril
   d. Clonidine

25. Catapres stimulates the alpha2 receptor to reduce blood pressure. It is classified as an antihypertensive/cardiovascular medication. What is the generic name of Catapres?
   a. Benazepril
   b. Enalapril
   c. Lisinopril
   d. Clonidine

26. Lasix is a loop diuretic. It is a medication that helps eliminate water from the body thus reducing blood pressure. What is the generic name of Lasix?
   a. Furosemide
b. Hydrochlorothiazide
  c. Lisinopril
  d. Spironolactone

27. Zestril is an ace-inhibitor and acts on enzymes in the kidney to lower blood pressure. It is classified as an antihypertensive/cardiovascular medication. What is the generic name of Zestril?
  a. Losartan
  b. Lisinopril
  c. Lisinopril, hydrochlorothiazide
  d. Metoprolol

28. Lopressor is a beta blocker and acts on the receptors in the heart to reduce heart rate and blood pressure. It is classified as an antihypertensive/cardiovascular medication. What is the generic name of Lopressor?
  a. Metoprolol tartrate
  b. Olmesartan
  c. Propranolol
  d. Ramipril

29. Benicar is an angiotensin receptor blocker and works on enzymes produced by the kidney to lower blood pressure. What is the generic name of Benicar?
  a. Metoprolol tartrate
  b. Olmesartan
  c. Propranolol
  d. Ramipril

30. Altace is an ace-inhibitor. What is the generic name of Altace?
  a. Ramipril
  b. Valsartan
  c. Lisinopril
  d. Benazepril

31. Aldactone is a potassium sparing diuretic. What is the generic name of Aldactone?
  a. Furosemide
  b. Spironolactone
  c. Ramipril
  d. Valsartan

32. Diovan is an angiotensin receptor blocker. What is the generic name of Diovan?
  a. Furosemide
  b. Spironolactone
  c. Ramipril
  d. Valsartan

33. Xarelto thins the blood. It is an anticoagulant that is classified as a cardiovascular/antihypertensive medication. What is the generic name of Xarelto?
  a. Coumadin
b. Apixaban
c. Rivaroxaban
d. Diovan

34. Peridex is a mouthwash. What is the generic name of Peridex?
   a. Biotin
   b. Chlorhexidine gluconate
   c. Listerine
   d. Salt Water

35. Temovate is a topical steroid cream. What is the generic name of Temovate?
   a. Hydrocortisone
   b. Clobetasol
   c. Clotrimazole
   d. Triamcinolone

36. Atarax is an antihistamine. What is the generic name of Atarax?
   a. Hydroxyzine
   b. Diphenhydramine
   c. Meclizine
   d. Doxylamine

37. Bentyl is a medication used for irritable bowel syndrome. It is classified as a gastrointestinal medication. What is the generic name of Bentyl?
   a. Hydroxyzine
   b. Dicyclomine
   c. Meclizine
   d. Doxylamine

38. Adipex-P is a medication used to decrease appetite stimulation. What is the generic name of Adipex-P?
   a. Amphetamine
   b. Phentermine
   c. Zolpidem
   d. Dextroamphetamine

39. Nexium is a medication used to decrease reflux. It has a mechanism of action known as a proton pump inhibitor. What is the generic name of Nexium?
   a. Omeprazole
   b. Esomeprazole
   c. Lansoprazole
   d. Dexlansoprazole

40. Pepcid is a medication used to decrease reflux. It has a mechanism of action known as an H2 blocker. What is the generic name of Pepcid?
   a. Famotidine
   b. Ranitidine
c. Omeprazole
d. Lansoprazole

41. Prevacid is a medication used to decrease reflux. It is a proton pump inhibitor. What is the generic name of Prevacid?
   a. Famotidine
   b. Ranitidine
   c. Omeprazole
   d. Lansoprazole

42. Zofran is an anti-nausea medication. What is the generic name of Zofran?
   a. Promethazine
   b. Ondansetron
   c. Metformin
   d. Estradiol

43. MiraLAX is a stool softener. Typical prescriptions for MiraLAX state to pour ½ capful to 1 capful of MiraLAX powder in 8 ounces of water or juice. What is the generic name of MiraLAX?
   a. Magnesium citrate
   b. Fleets enema
   c. Polyethylene Glycol
   d. Docusate Sodium

44. Humalog is an insulin used to reduce blood glucose in the body. It is a fast acting insulin typically injected after meals. What is the generic name of Humalog?
   a. Insulin Lispro
   b. Insulin Glargine
   c. Insulin Aspart
   d. Insulin Detemir

45. Lantus Solostar is a long acting insulin that is used to lower blood glucose in the body. It is typically injected at bedtime. What is the generic name of Lantus?
   a. Insulin Lispro
   b. Insulin Glargine
   c. Insulin Aspart
   d. Insulin Detemir

46. Orapred is an oral steroid that is used to treat inflammation in the body. What is the generic name of Orapred?
   a. Prednisone
   b. Prednisolone
   c. Methylprednisolone
   d. Hydrocortisone

47. Amaryl is used to treat type 2 diabetes. What is the generic name of Amaryl?
   a. Glyburide
   b. Glimepiride
   c. Metformin
   d. Glipizide
48. Glucophage is used to treat type 2 diabetes. What is the generic name of Glucophage?
   a. Glyburide
   b. Glimepiride
   c. Metformin
   d. Glipizide

49. Viagra is used to treat erectile dysfunction. What is the generic name of Viagra?
   a. Tadalafil
   b. Sildenafil
   c. Revatio
   d. Cialis

50. Synthroid is used to treat hypothyroidism. What is the generic name of Synthroid?
   a. Armour Thyroid
   b. Levothyroxine
   c. Dessicated Thyroid
   d. Thyroxine

51. Plaquenil is frequently used to treat lupus. It is classified as an antirheumatic. What is the generic name of Plaquenil?
   a. Hydroxychloroquine
   b. Methotrexate
   c. Allopurinol
   d. Rheumatrex

52. Rheumatrex is classified as an antirheumatic. What is the generic name of Rheumatrex?
   a. Hydroxychloroquine
   b. Methotrexate
   c. Allopurinol
   d. Rheumatrex

53. Lioresal is a muscle relaxant. What is the generic name of Lioresal?
   a. Carisoprodol
   b. Baclofen
   c. Cyclobenzaprine
   d. Methocarbamol

54. Flexeril is a muscle relaxant. What is the generic name of Flexeril?
   a. Carisoprodol
   b. Baclofen
   c. Cyclobenzaprine
   d. Methocarbamol

55. Robaxin is a muscle relaxant. What is the generic name of Robaxin?
   a. Carisoprodol
   b. Baclofen
   c. Cyclobenzaprine
d. Methocarbamol

56. Fosamax is used to treat osteoporosis. What is the generic name of Fosamax?
   a. Alendronate
   b. Ibandronate
   c. Zoledronate
   d. Risedronate

57. Imitrex is used to treat migraine headaches. What is the generic name of Imitrex?
   a. Triptan
   b. Sumatriptan
   c. Eletriptan
   d. Rizatriptan

58. Neurontin is used to treat neuropathy. What is the generic name of Neurontin?
   a. Gabapentin
   b. Lyrica
   c. Pregabalin
   d. Seroquel

59. Keppra is used to treat seizures. What is the generic name of Keppra?
   a. Lamictal
   b. Levothyroxine
   c. Levetiracetam
   d. Gabapentin

60. Xanax is used to treat anxiety. What is the generic name of Xanax?
   a. Alprazolam
   b. Diazepam
   c. Flurazepam
   d. Lorazepam

61. Celexa is an anti-depressant. What is the generic name of Celexa?
   a. Lorazepam
   b. Citalopram
   c. Escitalopram
   d. Sertraline

62. Klonopin is frequently used to treat both anxiety and seizure disorders. What is the generic name of Klonopin?
   a. Clonazepam
   b. Lorazepam
   c. Diazepam
   d. Alprazolam

63. Lexapro is an anti-depressant. What is the generic name of Lexapro?
   a. Sertraline
b. Escitalopram

c. Citalopram

d. Fluoxetine

64. Prozac is an anti-depressant. What is the generic name of Prozac?
   a. Sertraline
   b. Escitalopram
   c. Citalopram
   d. Fluoxetine

65. Zoloft is an anti-depressant. What is the generic name of Zoloft?
   a. Sertraline
   b. Escitalopram
   c. Citalopram
   d. Fluoxetine

66. Ambien is classified a hypnotic. It is used to treat insomnia. What is the generic name of Ambien?
   a. Zolpidem
   b. Zyprexa
   c. Haloperidol
   d. Diphenhydramine

67. Vyvanse is classified as an ADHD medication. It is a stimulant. What is the generic name of Vyvanse?
   a. Lisdexamfetamine
   b. Amphetamine
   c. Dextroamphetamine
   d. Dexamethasone

68. Risperdal is used to treat psychosis. What is the generic name of Risperdal?
   a. Haloperidol
   b. Risperidone
   c. Chlorthalidone
   d. Quetiapine

69. Flovent HFA is an inhaled corticosteroid. What is the generic name of Flovent?
   a. Beclomethasone
   b. Fluticasone
   c. Betamethasone
   d. Azelastine

70. Claritin is an antihistamine. What is the generic name of Claritin?
   a. Cetirizine
b. Loratadine 
    c. Diphenhydramine 
    d. Doxylamine 

71. Phenergan is an anti-nausea medication. What is the generic name of Phenergan? 
   a. Ondansetron 
   b. Promethazine 
   c. Meclizine 
   d. Prochlorperazine 

72. ProAir is an inhaler used to treat asthma. ProAir often is referred to as a rescue inhaler. What is the 
    generic name of ProAir? 
   a. Albuterol 
   b. Pirbuterol 
   c. Nebivolol 
   d. Metoprolol 

73. Flomax is used to treat urinary and kidney stone issues. What is the generic name of Flomax? 
   a. Tamsulosin 
   b. Sildenafil 
   c. Tadalafil 
   d. Oxybutynin 

74. Ditropan is used to treat bladder spasms. What is the generic name of Ditropan? 
   a. Tamsulosin 
   b. Sildenafil 
   c. Tadalafil 
   d. Oxybutynin 

75. How long did you study for the Top 200? 
   a. 1 hour 
   b. 2 hours 
   c. 4 hours 
   d. Greater than 4 hours 

Practice Quiz 3 

Name: Baby Girl Starks DOB 10/30/2018 Allergies: NKA Weight: 7.5 kg 
Address: 1580 Cove Mile Rd Calera, AL 
Date: 05/29/2019
Amoxil 400mg/5mL  #100mL
1 tsp PO BID for 10 days  
#0 refills

Dispense as Written _______  Product Selection Permitted

1. How many mL’s is in 1 teaspoonful (tsp)?
   a) 1 mL
   b) 2 mL
   c) 4 mL
   d) 5 mL

2. How many mL’s does Baby Girl Starks take per day?
   a) 5 mL
   b) 7.5 mL
   c) 9 mL
   d) 10 mL

3. The prescriber wants us to dispense 100 mL to this patient. What is the day’s supply?
   a) 5 days
   b) 7 days
   c) 10 days
   d) 14 days

4. Baby Girl Starks weighs 7.5 kg – what is her weight in pounds (lbs)?
   a) 2.2 lbs
   b) 13.2 lbs
   c) 16.5 lbs
   d) 17.6 lbs

5. The bottle of Amoxicillin has to be reconstituted with distilled water to yield 400mg of drug per teaspoonful. How much water is required to reconstitute a 100 mL bottle size of Amoxicillin 400mg/5mL?
<table>
<thead>
<tr>
<th>Bottle Size</th>
<th>Amount of Water Required for Reconstitution</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 mL</td>
<td>36 mL</td>
</tr>
<tr>
<td>75 mL</td>
<td>54 mL</td>
</tr>
<tr>
<td>100 mL</td>
<td>71 mL</td>
</tr>
<tr>
<td>5 mL</td>
<td>5 mL</td>
</tr>
</tbody>
</table>

Each teaspoonful (5 mL) will contain 400 mg amoxicillin.

a) 36 mL  
b) 54 mL  
c) 71 mL  
d) 100 mL

Name: Steve Hartley  
DOB 10/20/1972  
Allergies: ?  
Address: 1117 South Ave Bessemer, AL  
Date: 04/29/2019

Cipro 500mg tablet #qs  
1 tab PO BID for 14 days  
#0 refills

Dispense as Written ________  
Product Selection Permitted

6. Q.S. means quantity sufficient. How many Cipro 500mg tablets should be dispensed based on the prescribers directions of Q.S.?  
a) 7 tablets  
b) 14 tablets  
c) 21 tablets  
d) 28 tablets

Name: Steve Hartley  
DOB 10/20/1972  
Allergies: ?
Magic Mouthwash (equal parts Lidocaine/Benadryl/Nystatin) #qs
1 tbsp swish and spit QID prn mouth ulcers for 7 days
#0 refills

7. How many ounces should be dispensed for a 7 day supply?
   a) 10 ounces
   b) 12 ounces
   c) 14 ounces
   d) 16 ounces

8. There are three ingredients in this magic mouthwash. Each ingredient will makeup 1/3 of the total volume of the finished product. How many mL’s is each part (Lidocaine/Benadryl/Nystatin).
   a) 100 mL
   b) 120 mL
   c) 140 mL
   d) 160 mL

9. How often can Steve swish and spit the medication?
   a) Once daily
   b) Twice daily
   c) Three times daily
   d) Four times daily

Slim Hendricks brings in a prescription for Hydrocortisone ointment 10%. The prescriber requests that you dispense 90 grams. In your stock you have bulk 20% Hydrocortisone ointment and 5% Hydrocortisone ointment.
10. How many grams of 20% Hydrocortisone must be used to compound 10% Hydrocortisone.
   a) 10 grams
   b) 20 grams
   c) 30 grams
   d) 40 grams

11. How many grams of 5% Hydrocortisone must be used to compound 10% Hydrocortisone.
   a) 30 grams
   b) 40 grams
   c) 50 grams
   d) 60 grams

12. How many days do you have to notify the State Board of Pharmacy after a change in employment?
   a. 1
   b. 5
   c. 7
   d. 10

13. Technicians renew their license in ____ years?
   a. Even
   b. Odd
   c. Annual
   d. Leap
14. Pharmacists and Pharmacies renew their license in ____ years?
   a. Even
   b. Odd
   c. Annual
   d. Leap

15. In the State of Alabama Pharmacy Technicians can accept phone in prescriptions?
   a. True
   b. False

16. In the State of Alabama Pharmacy Technicians can counsel patients about their prescriptions?
   a. True
   b. False

17. In the State of Alabama you enter the pharmacy and there is one Pharmacist on duty. How many Pharmacy Technicians can be in the pharmacy?
   a. 1
   b. 2
   c. 3
   d. 4

18. In the State of Alabama how many grams of pseudoephedrine can be sold per month?
   a. 1.2 grams
   b. 2.4 grams
   c. 3.6 grams
   d. 7.5 grams

19. USP Chapter 795 sets the standards for?
   a. Non-sterile compounding
   b. Sterile compounding
   c. Hazardous compounding
   d. Drug manufacturing

20. USP Chapter 797 sets the standards for?
   a. Non-sterile compounding
   b. Sterile compounding
   c. Hazardous compounding
   d. Drug manufacturing

21. USP Chapter 800 sets the standards for?
   a. Non-sterile compounding
   b. Sterile compounding
   c. Hazardous compounding
   d. Drug manufacturing
22. The deaths of patients with fungal meningitis because of the New England Compounding Center establishes the importance of USP Chapter _____?
   a. 795
   b. 797
   c. 800
   d. 1160

23. The first five numbers of a National Drug Code (NDC) 54321-4321-21 represent?
   a. Manufacturer
   b. Drug and strength
   c. Package size
   d. Lot

24. The middle four numbers of a National Drug Code (NDC) 54321-4321-21 represent?
   a. Manufacturer
   b. Drug and strength
   c. Package size
   d. Lot

25. The last two numbers of a National Drug Code (NDC) 54321-4321-21 represent?
   a. Manufacturer
   b. Drug and strength
   c. Package size
   d. Lot

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**Lesson 5 Homework**

1. Read Chapter 13

2. Read Chapter 6

3. Review Lesson 5

4. Review Quiz 2

5. Review Quiz 3
Lesson 6 Part 1

A. **Mail Order Pharmacy** – a pharmacy that sends medication to patients through the mail

1. View the following video showing the process of a mail order pharmacy: https://youtu.be/GP9aYElQe0vk
2. These pharmacies aren’t walk in facilities. This is also known as being “closed door” facility.
3. Automation is essential for mail order pharmacies to ensure mistakes aren’t made during the dispensing process.
4. Counseling is offered via 1-800 call centers

B. **Long Term Care facilities** – these facilities provide care for those unable to provide care for themselves. This includes nursing homes, psychiatric institutions, and rehabilitation facilities.

1. Technicians play a vital role in preparing medication carts, filling automated dispensing systems, and crash/code cart.
2. What is a crash/code cart? View this YouTube Video: https://youtu.be/Zaj1Bd2eXbg
3. Pharmacists that work in these institutions are often called “Consultant Pharmacists”

C. **Home Infusion** – provides pharmaceutical care in a patient’s home; pharmacies that provide home infusion care specialize in intravenous medications and enteral formulations.

1. Therapies provided include: antibiotic therapy, parenteral nutrition, pain management, chemotherapy (pg. 636)
2. Compounding of intravenous medications follows which of the following: USP 795, USP 797, or USP 800?
3. Home Infusion pharmacies must be coordinated, and communication must flow through various providers of care which include pharmacists, physicians, pharmacy technicians, nurses, nutritionists/dietitians
4. View this video discussing home infusion: https://youtu.be/bAgi1QU7wA
D. **Nuclear pharmacy** – these pharmacies are specialized in providing radiopharmaceuticals for the diagnosis and treatment of disease

1. Review page 638-639 of text and the examples of radiopharmaceuticals used in diagnostic testing
2. Radiopharmaceuticals are considered hazardous medications
3. Orders for radiopharmaceuticals consist of four elements: agent to be administered, amount of radioactivity, time of administration, patient name (pg. 639)
4. Workers must wear badges to monitor radiation exposure

E. **Compounding community pharmacies** – these pharmacies fill prescriptions like any other chain pharmacy but also provide the additional service of providing simple compounding formulations.

1. Simple non-sterile compounding includes crushing tablets and suspending the crushed tablets in simple syrup, making an ointment or paste for diaper rash, making a magic mouthwash that consists of Benadryl, lidocaine, and nystatin for mouth ulcers.
3. These pharmacies fall under the guidance of USP 795, USP 797, and USP 800
Lesson 6 Part 2

Errors and Omissions

· Medications errors are made every day. It is the job of the Pharmacist to prevent these errors from occurring.

· The right drug to the right patient at the right dose must be dispensed. This is the goal of the practicing Pharmacist.

Some of the frequent errors that occur are as follows:

1. A patient receives the wrong drug (ex. verified Amox 875 drug dispensed should have been Augmentin 875)

2. A Pharmacist fills the drug under the wrong patient profile (ex. Sally Smith’s medication filled under Susie Smith’s profile)

3. A Pharmacist verifies a medication that is not appropriate for patient weight or size (adult dose for pediatric patient)

4. An incomplete list of drug allergies leads to filling a medication that the patient has an allergy to (ex. sulfa allergy for Bactrim Rx)

5. Medications are contraindicated for the patient based on their medical history (ex. Ibuprofen prescribed to a patient with severe kidney disease)

6. A patient’s medication is administered incorrectly because the wrong route of administration was prescribed and/or dispensed (ex Flu Vaccine given Subq instead of IM)

7. A patient receives at medication at the wrong frequency (ex. Tylenol prescribed to be given every 2 to 4 hours when it should only be taken every 4 to 6 hours)

8. Prescriber information is incomplete. DEA number, address, state license, signature omitted and/or incomplete

9. Prescription dates, in the State of Alabama non-controlled substances good for 1 year from the date the prescription written and for controlled substances 6 months from the date written

10. Prescription incomplete (missing drug strength, quantity, appropriate directions)

11. Refills are correct for and/or appropriate for prescription (schedule 2 controlled substances should have no refills)
12. Appropriate auxiliary labels and/or directions for appropriate storage, shake well, to take with or without food

Let’s Practice ---- Continue to Next Page

Prescription Reads
Patient Name: Julia Smith DOB: 11/10/1992
Date Written: 12/01/2016
Drug Allergies: Fluticasone
Dispense: Flovent 44

Sig: 2 puff BID
Dispense Quantity: 1 inhaler
Prescriber: Jane Smoltz, CRNP

Prescription Label Reads
Patient Name: Jackie Smith
Dispense: Flovent 110
Date Filled: 12/15/2017
Sig: inhale 2 puffs twice daily  
Dispense Quantity: 1 inhaler  
Prescriber: John Smoltz, CRNP

Is there an error or omission? If so, explain.
Prescription Reads:
Patient Name: Sam Dawson DOB: 07/18/1956
Date Written: 12/05/2017
Drug Allergies: Sulfa
Dispense: Bactrim DS

Sig: 1 tab po bid x 10 days
Dispense: 20 tablets
Prescriber: Julie Dawson, MD
Product Selection Permitted
Prescription Label reads:
Patient Name: Sam Dawson
Drug Dispensed: Bactrim SS
Date Filled: 01/10/2018

Sig: take 1 tablet by mouth once daily for 10 days
Dispense: 10 tablets
Prescriber: Julie Dawson, MD

Is there an error or omission? If so, explain
Prescription Reads:
Patient Name: John Daniels DOB: 10/15/2001
Date Written: 12/15/2017
Drug Allergies: Hydrocodone
Dispense: Norco 5

Sig: 1 tab po q4h prn pain
Dispense: 40 tablets
Prescriber: Johnny Cape, CRNP
Supervising Physician: N/A
Product Selection Permitted
DEA Number: MS1234563

Is there an error or omission? If so, explain
Prescription Label reads:
Patient Name: John Daniels
Drug Dispensed: Endocet 5
Date Filled: 07/10/2018

Sig: take 1 tablet by mouth every six hours as needed for cough
Dispense: 50 tablets
Prescriber: Johnny Cape, CRNP
Is there an error or omission? If so, explain
Lesson 6 Homework

1. Read Chapter 18

2. Review Errors and Omission

3. Review Quiz 4
Practice Final Exam

Name: Baby Girl Starks DOB 10/30/2018 Allergies: NKA Weight: 7.5 kg
Address: 1580 Cove Mile Rd Calera, AL
Date: 05/29/2019

Rx
Amoxicillin 400mg/5mL  #100mL
1 tsp PO BID for 10 days
#0 refills
Dispense as Written _______ Product Selection Permitted

26. How many mL’s is in 1 teaspoonful (tsp)?
   e) 1 mL
   f) 2 mL
   g) 4 mL
   h) 5 mL

27. How many mL’s does Baby Girl Starks take per day?
   e) 5 mL
   f) 7.5 mL
   g) 9 mL
   h) 10 mL

28. The prescriber wants us to dispense 100 mL to this patient. What is the day’s supply?
   e) 5 days
   f) 7 days
   g) 10 days
   h) 14 days

29. Baby Girl Starks weighs 7.5 kg – what is her weight in pounds (lbs)?
   e) 2.2 lbs
   f) 13.2 lbs
   g) 16.5 lbs
   h) 17.6 lbs
30. The bottle of Amoxicillin has to be reconstituted with distilled water to yield 400mg of drug per teaspoonful. How much water is required to reconstitute a 100 mL bottle size of Amoxicillin 400mg/5mL?

<table>
<thead>
<tr>
<th>Bottle Size</th>
<th>Amount of Water Required for Reconstitution</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 mL</td>
<td>36 mL</td>
</tr>
<tr>
<td>75 mL</td>
<td>54 mL</td>
</tr>
<tr>
<td>100 mL</td>
<td>71 mL</td>
</tr>
<tr>
<td>5 mL</td>
<td>5 mL</td>
</tr>
</tbody>
</table>

Each teaspoonful (5 mL) will contain 400 mg amoxicillin.

e) 36 mL
f) 54 mL
g) 71 mL
h) 100 mL

Name: Steve Hartley DOB 10/20/1972 Allergies: ?
Address: 1117 South Ave Bessemer, AL
Date: 04/29/2019

RX

Cipro 500mg tablet #qs
1 tab PO BID for 14 days
#0 refills

Dispense as Written _______ Product Selection Permitted

31. Q.S. means quantity sufficient. How many Cipro 500mg tablets should be dispensed based on the prescribers directions of Q.S.?
e) 7 tablets
f) 14 tablets
g) 21 tablets
h) 28 tablets
Name: Steve Hartley DOB 10/20/1972 Allergies: ?
Address: 1117 South Ave Bessemer, AL
Date: 04/29/2019

Magic Mouthwash (equal parts Lidocaine/Benadryl/Nystatin) #qs
1 tbsp swish and spit QID prn mouth ulcers for 7 days
#0 refills

32. How many ounces should be dispensed for a 7 day supply?
   e) 10 ounces
   f) 12 ounces
   g) 14 ounces
   h) 16 ounces

33. There are three ingredients in this magic mouthwash. Each ingredient will makeup 1/3 of
    the total volume of the finished product. How many mL’s is each part
    (Lidocaine/Benadryl/Nystatin).
   e) 100 mL
   f) 120 mL
   g) 140 mL
   h) 160 mL

34. How often can Steve swish and spit the medication?
   e) Once daily
   f) Twice daily
   g) Three times daily
   h) Four times daily
Slim Hendricks brings in a prescription for Hydrocortisone ointment 10%. The prescriber requests that you dispense 90 grams. In your stock you have bulk 20% Hydrocortisone ointment and 5% Hydrocortisone ointment.

<table>
<thead>
<tr>
<th>5 (strength of lower strength component)</th>
<th>____/15 parts * 90 grams</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td></td>
</tr>
<tr>
<td>20 (strength of higher strength component)</td>
<td>____/15 parts * 90 grams</td>
</tr>
</tbody>
</table>

35. How many grams of 20% Hydrocortisone must be used to compound 10% Hydrocortisone.
   e) 10 grams
   f) 20 grams
   g) 30 grams
   h) 40 grams

36. How many grams of 5% Hydrocortisone must be used to compound 10% Hydrocortisone.
   e) 30 grams
   f) 40 grams
   g) 50 grams
   h) 60 grams

37. How many days do you have to notify the State Board of Pharmacy after a change in employment?
   a. 1
   b. 5
   c. 7
   d. 10

38. Technicians renew their license in ____ years?
   a. Even
   b. Odd
   c. Annual
   d. Leap

39. Pharmacists and Pharmacies renew their license in ____ years?
   a. Even
   b. Odd
   c. Annual
   d. Leap
40. In the State of Alabama Pharmacy Technicians can accept phone in prescriptions?
   a. True  
   b. False

41. In the State of Alabama Pharmacy Technicians can counsel patients about their prescriptions?
   a. True  
   b. False

42. In the State of Alabama you enter the pharmacy and there is one Pharmacist on duty. How many Pharmacy Technicians can be in the pharmacy?
   a. 1  
   b. 2  
   c. 3  
   d. 4

43. In the State of Alabama how many grams of pseudoephedrine can be sold per month?
   a. 1.2 grams  
   b. 2.4 grams  
   c. 3.6 grams  
   d. 7.5 grams

44. USP Chapter 795 sets the standards for?
   a. Non-sterile compounding  
   b. Sterile compounding  
   c. Hazardous compounding  
   d. Drug manufacturing

45. USP Chapter 797 sets the standards for?
   a. Non-sterile compounding  
   b. Sterile compounding  
   c. Hazardous compounding  
   d. Drug manufacturing

46. USP Chapter 800 sets the standards for?
   a. Non-sterile compounding  
   b. Sterile compounding  
   c. Hazardous compounding  
   d. Drug manufacturing

47. The deaths of patients with fungal meningitis because of the New England Compounding Center establishes the importance of USP Chapter ______?
   a. 795  
   b. 797  
   c. 800
48. The first five numbers of a National Drug Code (NDC) 54321-4321-21 represent?
   a. Manufacturer
   b. Drug and strength
   c. Package size
   d. Lot

49. The middle four numbers of a National Drug Code (NDC) 54321-4321-21 represent?
   a. Manufacturer
   b. Drug and strength
   c. Package size
   d. Lot

50. The last two numbers of a National Drug Code (NDC) 54321-4321-21 represent?
   a. Manufacturer
   b. Drug and strength
   c. Package size
   d. Lot