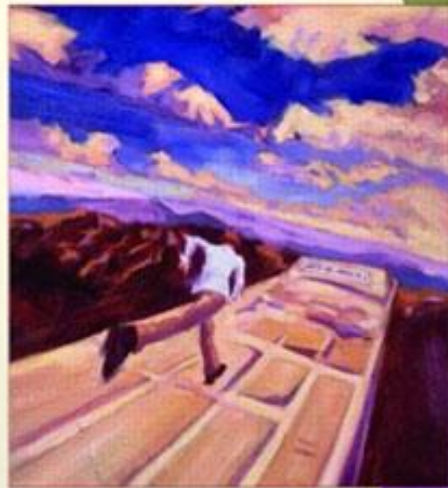


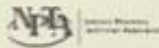
SOLUTIONS MANUAL

THE PHARMACY TECHNICAL SERIES

Pharmacy Calculations



Mike Johnston



2

Systems of Measurement

LEARNING OBJECTIVES

After completing this chapter, students should be able to:

- List the three fundamental systems of measurement.
- List the three primary units of the metric system.
- Define the various prefixes used in the metric system.
- Recognize abbreviations used in measurements.
- Explain the use of International Units and milliequivalents.

Chapter Outline

Learning Objectives

Introduction

The Metric System

 Guidelines for Metric Notation

 Practice Problems 2.1

 Practice Problems 2.2

International Units (U)

 Practice Problems 2.3

Milliequivalents (mEq)

 Practice Problems 2.4

The Apothecary System

The Avoirdupois System

The Household System

 Practice Problems 2.5

Summary

Chapter Review Questions

ANSWERS TO PRACTICE PROBLEMS**2.1 Metric Notation**

1. 5 mcg
2. 0.2 mg
3. 16 gm
4. 0.05 kg
5. 10 mL
6. 3.1 L
7. 0.2 mcg
8. 500 mg
9. 0.06 gm
10. 100 mL
11. 41 L
12. 0.7 mcg
13. 0.08 mg
14. 2000 gm
15. 4.1 mL
16. 350 L
17. 7.4 gm
18. 1000 mcg
19. 1500 mg
20. $1\frac{1}{5}$ kg
21. 0.025 mg
22. 0.1 gm
23. 0.0006 kg
24. 1500 gm
25. 220 mg
26. 1,500,000 mcg
27. 1 mg
28. 15,600 mL
29. 1.5 L

30. 200,800,000 mcg
31. 0.56632 L
32. 0.988 gm
33. 12.5 mg
34. 7.5 L
35. 789 mL
36. 0.0001 gm
37. 6000 kg
38. 105,000 mL
39. 2,000,000,000 mcg
40. 1000 mL

2.2 Unit Conversions

1. 2.8 kg
2. 12 tablets
3. a. 500 mg; b. 500 mg
4. 692.322 gm
5. 3.75 gm
6. 36 bottles
7. 0.85 gm
8. 212.5 mg
9. 1173.7 gm
10. 5 tablets

2.3 Unit Dosage Abbreviations

1. 20 units
2. 10,000 units
3. 1,000,000 units
4. 53 units
5. 200,000 units
6. 2300 units
7. 100 units

8. 1000 units
9. 60 units
10. 700 units

2.4 Milliequivalent Dosages

1. 50 mEq
2. 30 mEq
3. 40 mEq
4. 5 mEq
5. 15 mEq
6. 20 mEq
7. 80 mEq
8. 100 mEq
9. 10 mEq
10. 55 mEq

2.5 Measure Abbreviations

1. 50 mEq
2. 10 tsp
3. 15 oz.
4. 10 Tbsp
5. 100 U
6. 7 gtt.
7. 2 pt.
8. 6 qt.
9. 3 gal.
10. 500 U
11. 10 gr
12. $\frac{1}{2}$ oz.
13. 16 pt.
14. $2\frac{1}{2}$ gr
15. 30 oz.

CHAPTER REVIEW ANSWERS

1. D
2. C
3. A
4. B
5. F
6. K
7. E
8. G
9. M
10. J
11. N
12. I
13. L
14. H
15. true
16. false
17. false
18. false
19. true
20. the **meter**, which measures length; the **liter**, which measures volume; the **gram**, which measures weight
21. metric, apothecary, and household systems
22. insulin, heparin, penicillin
23. the number of grams of a drug in 1 mL of a normal solution
24. (any four of the ten guidelines listed in this chapter)