

LPN TO ADN Transition Study Guide

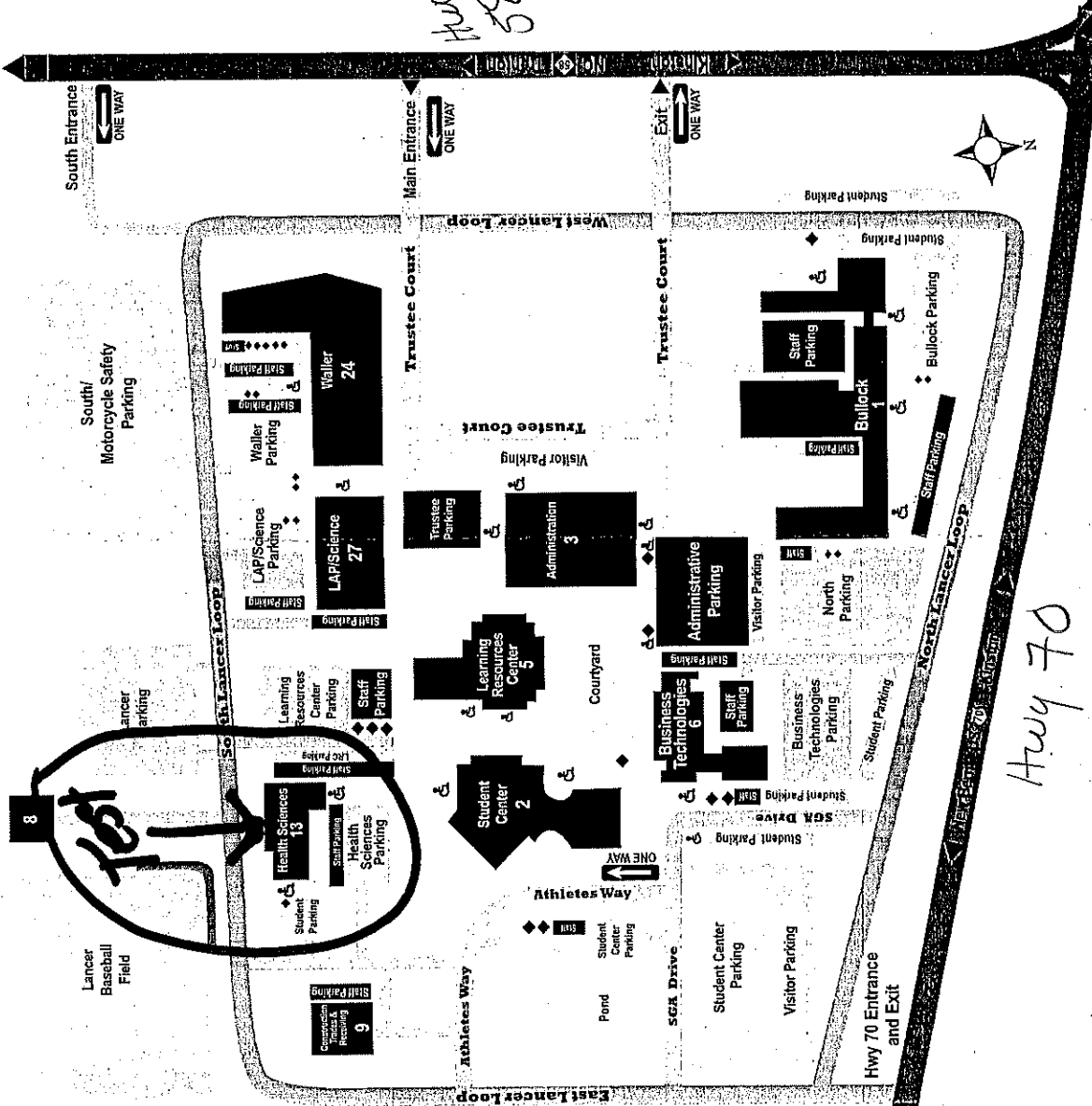


This study guide should provide the user with a review of basic math, drug calculations, and pharmacology. The samples are resourced in the books provided in the Learning Resource Center on Lenoir Community College's campus. The intent of the study guide is to assist in review and may not be all-inclusive. For questions or assistance, please contact the nursing faculty in the Health Sciences Building.

TESTING INFORMATION

1. Please anticipate the test taking three hours.
2. Please bring two #2 pencils.
3. Please come in with your driver license to prove identity.
4. No phones, smartwatches (Fitbits), coats, or jackets allowed in testing room.
5. Students will receive acceptance status usually within two weeks of testing.
6. No numerical grades will be reported to the student. This is a pass/fail test.
7. Drink/snack machine available if needed.
8. Must be seated 10 minutes before the test in the Health Sciences Building #13, upstairs room 215. If late, you will not be able to test and may reapply next year. Please see attached map and plan travel accordingly.

LENOIR COMMUNITY COLLEGE CAMPUS MAP



- 1-Bullock
- 2-Student Center
- 3-Administration
- 5-Learning Resources Center
- 6-Business Technologies
- 8-Surplus Equipment Storage
- 9-Construction Trades & Receiving
- 10-Early Childhood/Basic Law Enforcement Training
- 13-Health Sciences
- 14, 19, 20, 21, 22-Classrooms
- 15-Grounds Maintenance
- 18-Horticulture
- 24-Waller
- 27-LAP/Science
- 28-Maintenance

Buildings
Staff Parking
Student Parking
Handicapped Access
Visitor Parking

Lenoir Community College is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award associate degrees, diplomas, and certificates. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, Georgia 30033-4097 or call 404-679-4500 for questions about the accreditation of Lenoir Community College.

The College serves all applicants, students, or employees regardless of race, color, national origin, religion, sex, age, or disability.

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Transition Study Guide*

1. Review basic math principles.

Adding decimals

Subtracting decimals

Identifying the values of decimals

Identify true proportions

Equations that solve for the value of x

Multiplying fractions

Dividing fractions

Percentages: change to ratio, decimal numbers

Rounding numbers

Resource: Chapters 1 and 2 of *Dosage Calculations, 9th ed.*, G. Pickar & A. Abernathy; Cengage, 2013.

2. Basic administration of medications

Identify the 7 “Rights of Medication Administration”

Identify complete medication orders

Identify a medication name as being chemical, generic, trade

Identify proper injection site for ID, SC, IM

Identify proper equipment to use to administer medications

Identify proper technique and routes of/for administration:

Oral, enteral, parenteral, eye/ear drops, topicals, inhalers

Assessment data for administering medications

History and physical, weight gain/loss, pain, labs specific to medication (kidney function studies, liver panel, SGOT, LDH, 24-hour urine, BUN, creatinine, albumin, uric acid levels, digoxin, PT with INR, PTT, and potassium)

Resource: Chapters 1, 2, 3, 4, & 6 of *Pharmacology for Nurses: A Pathophysiologic Approach, 4th ed.*, M. Adams, N. Holland, and C. Urban; Pearson, 2014.
Chapters 6-11 of *Dosage Calculations, 9th ed.*, G. Pickar & A. Abernathy; Cengage, 2013.

*Resources are on reserve in the LRC (Library) on campus.

3. Pharmacological Implications of common drug classifications:

- Benzodiazepines
- Insulins
- Anticoagulants
- Monoamine Oxidase Inhibitors (MAOIs)
- Non-Steroidal Anti-Inflammatory Drugs
- Nitrates
- Beta Blockers
- ACE Inhibitors
- Ca Channel Blockers
- Diuretics
- Opioid Analgesics
- Cardiac Glycosides

- Therapeutic responses to medications
- Adverse reactions to medications
- Client teachings
- Antidotes to medications
- Therapeutic ranges for common medications (Digoxin, Depakote, Dilantin, Tegretol, etc.)

4. Calculations of medications

- Oral medications: tablets, liquids
- Intravenous medications
- Pediatric medications
- Safe dose ranges
- Intravenous rate calculations: pump and manual
- Heparin drips
- Insulin drips
- Conversions between Metric, Apothecary, and Household

Resource: Chapters 3-5, 10-15 and 17 of *Dosage Calculations, 9th ed.*, G. Pickar & A. Abernathy; Cengage, 2013.

Reference: Chapters 1, 2, 3, 4, & 6 of *Pharmacology for Nurses: A Pathophysiologic Approach, 4th ed.*, M. Adams, N. Holland, and C. Urban; Pearson, 2014.

I. Basic Math Principles

Adding and subtracting decimals:

$$1.5 + 0.05 = 1.55$$

$$0.725 - 0.5 = 0.225$$

Identify the decimal with the highest value:

a. 0.016

b. 0.035

c. 0.162

answer

c. 0.162

a. 0.4

b. 0.2

c. 0.5

answer

b. 0.5

Identify true proportions:

$$2 : 4 = 6 : 12$$

$$2 \times 12 = 24$$

$$4 \times 6 = 24$$

true proportion

Multiply fractions and solve for "x":

$$\frac{20}{400} = \frac{x}{1680}$$

$$\frac{0.35}{1.3} \times 4.5 = x$$

$$\frac{400x}{400} = \frac{33,600}{400}$$

$$x = 84$$

$$\frac{1.575}{1.3} = 1.21$$

Divide fractions and solve for x:

$$\frac{1}{150} \div \frac{1}{100} = x$$

$$\frac{1}{150} \times \frac{100}{1} = \frac{100}{150} = \frac{2}{3}$$

Identify the fraction with the highest value:

a. $\frac{1}{200}$

b. $\frac{1}{150}$ answer
 b. $\frac{1}{150}$

c. $\frac{1}{300}$

Percentages: convert as indicated

3% to a decimal

$$3\% = \frac{3}{100} = \frac{100}{100} \cdot \frac{3}{100} = 0.03$$

25% to a fraction and reduce to lowest terms

$$25\% = \frac{25}{100} = \frac{1}{4}$$

Calculations of Medications

The order reads to give Erythromycin suspension 600mg p.o. q6h. The supply on hand is Erythromycin 400mg/5ml. How much will you give? 7.5 ml

$$\frac{D \text{ (desire)}}{H \text{ (have)}} \times Q \text{ (quantity)} = x \text{ (amount)}$$

$$\frac{600}{400} \times 5 = \frac{3000}{400} = \frac{3000}{400} = \frac{30}{4}$$

$$\begin{array}{r} 7.5 \\ 4 \overline{)30.0} \\ \underline{28} \\ 20 \\ \underline{20} \\ 0 \end{array}$$

The order is for heparin 3500U SC q 12h. The floor stock has heparin 5000U/mL. How much would you give? 0.7 mL

$$\frac{D}{H} \times Q = x \quad \frac{3500}{5000} \times 1 \text{ mL} = \frac{3500}{5000} = \frac{35}{50} = 50 \overline{)35.0} = 0.7$$

Safe dose:

Order is for Suprax 120mg p.o q.d. for a 33 lb. child. The recommended dosage of Suprax for children under 50 kg is 8mg/kg/day p.o. as a single dose. Is this dosage safe? Yes

Step 1: Convert lbs to kg

$$33 \text{ lb} = x \text{ kg}$$

$$2.2 \text{ lb} = 1 \text{ kg}$$

Child weighs 15 kg
Recommended dose is 8 mg/kg/day

$$\frac{33}{2.2} = \frac{2.2}{2.2} \times x$$

Step 2: 8mg = 1 kg
x mg = 15 kg
1 x = 120 mg

$$2.2 \overline{)330} = 15 \text{ kg}$$

Child weighs 15 kg

Step 3: This child can receive 120mg/day safely.

Step 4: Yes, it is a safe dose.

IV flow rates:

Flow rate using electronic pump:

Using an IV pump: 1800mL of NS IV is to infuse in 15h using a IV pump. What is the flow rate to set the pump on? 120mL/hr

$$\frac{\text{Total vol}}{\text{Total time}} = \frac{\text{mL}}{\text{h}}$$

$$1800\text{mL} = 15 \text{ hr}$$

$$x \text{ mL} = 1 \text{ hr}$$

$$\frac{1800}{15} = \frac{15x}{15}$$

$$x = 120\text{mL/hr}$$

Remember: IV pumps work on mL/hr

Flow rates using manual control:

$$\frac{\text{Volume (mL)}}{\text{Time (min)}} \times \text{Calibration or drop factor (gtt/mL)} = \text{Rate (gtt/min)}$$

Order is for 3000mL D5W IV @ 125mL/hr. The drop factor is 10 gtt/mL. What is the flow rate per minute? 21 gtt/min

$$\frac{125}{60} \times 10 = \frac{1250}{60} = \frac{125}{6}$$
$$\frac{20.8}{6} = 21$$
$$\begin{array}{r} 12 \\ 50 \\ \hline 48 \\ 2 \end{array}$$

Heparin/Insulin flow rate:

For heparin mL/hr rate

$$\frac{D \text{ (U/h desired)}}{H \text{ (U you have on hand)}} \times Q \text{ (mL you have on hand)} = R \text{ (mL/h)}$$

Order is D5 W 500 mL with Heparin 25,000U IV @ 1000 u/h. What is the flow rate in mL/h? 20mL/h

$$\frac{1000 \text{ U/H}}{25,000 \text{ U}} \times 500\text{mL} = \frac{1000}{25,000} \times \overset{1}{500} = \frac{1000}{50} = 20\text{mL/h}$$

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