

BAPTIST HEALTH MEDICATION EXAMINATION INFORMATION SHEET

Before you begin employment in the role of RN or LPN, you are required to take a Medication Administration Exam. The exam may be administered at one of our BH Hospital locations or scheduled by the Central Staffing Office for BAPTIST HEALTH Schools and Professional Development, located at 11900 Colonel Glenn Rd. Little Rock, Arkansas. The following information answers frequently asked questions:

WHY IS IT GIVEN?

The exam is used as a part of a process in determining the basic proficiency in medication administration. The exam emphasizes essential, basic knowledge used in nursing practice, and is intended for both RN's and LPN's.

WHAT TYPE OF EXAM?

It contains 50 multiple choice questions. You have 1 hour to complete the exam. There are three basic categories:

- Dosage Calculations
- Basic Principles of Medication Administration
- Common Effects of Frequently Administered Medications

The exam is administered on a computer and graded immediately.

WHAT IF I DO NOT MAKE AN ACCEPTABLE SCORE?

It is our policy that an acceptable score (80%) must be made before you begin employment (this includes any orientation). Your employment offer is contingent upon three things: (1) Proof of Arkansas licensure (2) Successful completion of the Medication Administration Exam and (3) Successful completion of the pre-employment physical. If your score is below 80% you should contact the supervisor who made the contingent employment offer to you. If the supervisor wishes, they can choose to hold the position and give you the opportunity to retake the exam. In no case is a supervisor obligated to hold a position for an applicant who fails to obtain a passing score of 80% .

WHAT SHOULD I BRING?

- (1) Photographic proof of identification (a current driver's license)
- (2) Social Security Card (if Social Security number is not on your driver's license)
- (3) #2 Lead Pencil (only needed if computer test is unavailable)
- (4) Calculator (optional) **No Cell Phones**

**Baptist Health
Medication Examination
Study Guide**

I. Dosage calculations and Common Abbreviations

examples: **ACE** inhibitors
MAOI / NSAID

Metric / apothecary system
Conversions
Reading measurements
Concentrations of syringe
Calculating IV flow rate
Calculating oral and IM dosage

II. General Principles of Medication Administration

- a. Mechanisms of action
- b. Onset, peak, duration, elimination (serum half-life)
- c. Drug interactions (drug - drug, food-drug)
- d. Eight Rights of drug administration
- e. Nursing considerations for administration of meds by different routes:
examples - vaginal, rectal, eye, ear, orally, PCA, transderm-patch IM , IV ,
Z track, inhalation, subcutaneous and sublingual
- f. TPN
- g. Drug responses of the geriatric patient
- h. Nursing considerations in teaching and promoting compliance
- i. Intravenous therapy
- j. Reconstituting solutions
- k. Assuring patient identification
- l. Nursing actions with patient refusal
- m. Blood transfusions
- n. Body substance precautions

Pharmacology Review

III.

ANTI-INFECTIVES

Sulfonamides
Penicillins
Cephalosporins
Tetracyclines, Macrolides, and Lincosamides
Fluoroquinolones and Aminoglycosides
Antitubercular
Leprosatatic
Antiviral
Antifungal
Antiparasitic

Type of Durgs Used to Manage Pain

Nonopioid Analgesics: Salicylates and Nonsalicylates
Nonopioid Analgesics: Nonsteroidal Anti-inflammatory Drugs (NSAIDs)
Opioid Analgesics
Opioid Antagonists

Drugs That Affect the Neuromuscular System

Anesthetic
Antianxiety
Sedatives and Hypnotics
Antidepressant
Central Nervous System Stimulants
Antipsychotic
Adrenergic
Adrenergic Blocking
Cholinergic
Cholinergic Blocking
Anticonvulsants
Antiparkinsonism
Cholinesterase Inhibitors

Drugs That Affect the Respiratory System

Antitussives, Mucolytics, and Expectorants
Antihistamines and Decongestants
Bronchodilators and Antiasthma

Drugs That Affect the Cardiovascular System

Cardiotonic and Inotropic
Antiarrhythmic
Antianginal and Peripheral Vasodilating
Antihypertensive Drugs
Antihyperlipidemic Drugs

Drugs That Affect the Hematologic System

Anticoagulant and Thrombolytic
Agents used in the treatment of Anemia

Drugs That Affect the Gastrointestinal and Urinary Systems

Diuretics
Urinary Tract Anti-Infectives, Antispasmodics

Drugs That Affect the Endocrine System

Antidiabetic Drugs
Pituitary and Adrenocortical Hormones
Thyroid and Antithyroid drugs
Male and Female Hormones

Drugs That Affect the Immune System

Immunologic Agents
Antineoplastic

Amoxicillin
Penicillins
Gentamicin
Tetracyclines
Beclomethasone
Vitamin K
Protamine sulfate
Coumadin
Heparin
Simethicone
Mylanta
Metformin
Lipitor
Diazepam
Lisinopril
Atropine
Epinephrine
Adrenalin
Nitrostat/Transderm-Nitro
Clonidine
Lanoxin
Intropin
Potassium Chloride
Lantus
NPH
Morphine
Narcan
Valium
Versed
Haldol
Tylenol
Lasix
Albuterol
Hydrochlorothiazide

Review of Calculation of Drug Dosages

Convert 0.1 gram (g) to milligrams (mg)
1000 mg = 1 g

1000 mg:1g::X mg: 0.1 g

$$X = 1000 \times 0.1$$

$$X = 100 \text{ mg}$$

$$\frac{1000 \text{ mg}}{1 \text{ g}} = \frac{X \text{ mg}}{0.1 \text{ g}}$$

$$X = 1000 \times 0.1$$

$$X = 100 \text{ mg}$$

To find the correct dosage of a solid oral preparation, the following formula may be used;

$$\frac{\text{dose desired}}{\text{dose on hand}} = \text{dose administered (the unknown or X)}$$

$$\frac{D}{H} = X$$

To convert a known weight in kilograms to pounds, multiply the known weight by 2.2

Patient's weight in kilograms is 54
 $54 \times 2.2 = 118.8$ (119) lb

To convert a known weight in pounds to kilograms divide the known weight by 2.2

Patient's weight in pounds is 142
 $142 \text{ divided by } 2.2 = 64.5 \text{ kg}$

Calculating Intravenous flow rates

Total amount of solution divided by number of hours = number of ml/hr
ml/hr divided by 60 min./hr = number of ml/min
ml/min x drop factor = number of drops/min

Example: 1000 ml of IV solution is to infuse over a period of 8 hrs. The drop factor is 14.

1000 ml divided by 8 hrs = 125 ml/hr
125 divided by 60 minutes = 2.08 ml/min
2.08 X 14 = 29 drops / min.

or

Total amount of solution divided by number of hrs = number of ml/hr
ml/hr x drop factor divided by 60 = number of drops/min

example: 1000 ml of an IV solution is to infuse over a period of 6 hrs. The drop factor is 12.

1000 ml divided by 6 = 166.6 ml/hr
166.6 x 12 divided by 60 = 33.33 (33 to 34) drops / min

or

$$\frac{\text{drops / ml of given set (drop factor)}}{60 \text{ (minutes in an hour)}} \times \text{total hourly volume} = \text{drops/min}$$

Examples of Calculations

1.

An order is written for 1000 ml of normal saline to be administered IV over 10 hrs. The drop factor on the IV tubing is 15 drops/ml. What is the IV flow rate ?

2.

A patient needs to take 0.75 g tetracycline PO. The drug comes in 250 mg tablets. How many tablets should the patient take ?

3.

Heparin 800 units is ordered for a patient. The heparin is supplied in a multidose vial that is labeled 10,000 units/ml. How many ml of heparin would be needed to treat this patient ?

4.

Ordered: 6.5 mg . Available: 10 mg/ml.

Proper dose: _____ ml.

5.

Ordered: 300,000 units. Available : 400,000 units/5 ml.

Proper dose: _____ ml.

6.

Doctor orders 1 mg/kg PO

Patient weight is 150 lbs

Proper dose : _____ mg

Review the following references:

www.safemedication.com

Do a search on any search engine for “drug calculations” and/or “drug list”

RxList / Drugs A-Z / Drug List

FDA Drug Approval List

Drug Calculations Quiz / Basic Drug Calculation Review

Drug Handbook Ref by Davis/Saunders/Mosby

Focus on Nursing Pharmacology 4th Ed Lippincott Williams and Wilkins

Dimensional Analysis for Meds 3rd Ed Thomson - Delmar Learning

Introductory Clinical Pharmacology 8th Ed Lippincott's Practical Nursing

1. 100ml per hour
2. 3 tablets
3. .08 ml
4. .65 ml
5. 3.75 ml
6. 68 mg

