RxCalculations

NAPLEX PRACTICE QUESTIONS

21 calculation questions to prepare for the board exams

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NAPLEX PRACTICE QUESTIONS

CONVERSIONS

LEARN YOUR CONVERSION FACTORS AND PRACTICE HOW TO USE THEM

QUESTION 1

REVIEW HOW TO CONVERT FROM GRAIN TO MILLIGRAM

How many milligrams are equal to 1/150 gr of Nitroglycerine?

QUESTION 2

REVIEW HOW TO CONVERT FROM QUART TO MILLILITERS

How many grams of Heparin are required to prepare 1 quart of 0.45% solution?

QUESTION 3

REVIEW HOW TO CONVERT FROM GRAIN TO GRAMS AND GALLONS TO LITERS

If I want to make a gallon of cough preparation that will contain 1 grain of active ingredient per teaspoonful. How many grams of active ingredient will I need?

QUESTION 4

REVIEW HOW TO SOLVE A DAYS SUPPLY TYPE PROBLEM

If a prescription reads "Augmentin 875 mg po bid x 10 days," how many mL of Augmentin 250 mg/5 mL are required to fill a ten-day supply?

TOTAL PARENTERAL NUTRITION

PRACTICE USING CONVERSION FACTORS AND EQUATIONS FOR TPN CALCULATIONS

QUESTION 5

REVIEW HOW TO SOLVE A TPN TYPE PROBLEM

JM is a patient in the ICU (6'1" and 256 pounds). He is currently receiving 3-in-1 PN at 125 mL/h. The PN is 12.1% w/v dextrose and 4.7%w/v protein. The prescriber wants the patient's protein intake from the PN to be 1.4 g/kg IBW per day. By how many grams will the current protein need to be reduced to achieve this?

CONCENTRATION

REVIEW THE VARIOUS WAYS OF EXPRESSICONVERSION FACTORS AND EQUATIONS FOR TPN CALCULATIONS

QUESTION 6

REVIEW HOW TO SOLVE FOR FINAL CONCENTRATION OF A PREPARATION GIVEN THE CONCENTRATION AND QUANTITIES OF COMPONENTS TO BE COMBINED

If 60 g of 1% hydrocortisone are mixed with 80 g of 2.5% hydrocortisone, what is the percent of hydrocortisone in the final mixture?

QUESTION 7

REVIEW HOW TO SOLVE FOR FINAL CONCENTRATION OF A PREPARATION GIVEN THE CONCENTRATION AND QUANTITIES OF COMPONENTS TO BE COMBINED

How many mL of 75% alcohol should be mixed with 10% alcohol to prepare 30% of 500 mL alcohol solution ?

QUESTION 8

HOW TO SOLVE A DILUTIONS AND CONCENTRATION QUESTION USING THE ALLIGATION METHOD

An ointment contains 1%w/w calamine. How much calamine powder would be appropriate to add to a 200g of the ointment to produce a 4% w/w calamine ointment?

QUESTION 9

HOW TO SOLVE A RATIO STRENGTH CALCULATIONS PROBLEM

How much Lidocaine is required to prepare 30 mL of a 1:1000 Lidocaine solution?

PH AND BUFFERS

PRACTICE KEY CONCEPTS IN PH AND BUFFER CALCULATIONS

QUESTION 10

HOW TO SOLVE A PH AND BUFFER CALCULATIONS PROBLEM USING THE HENDERSON-HASSELBALCH EQUATION

What is the ratio of ionized to unionized species of a weakly acidic drug at pH = 7 if the pKa = 5?

MILLIEQUIVALENTS

PRACTICE USING KEY EQUATIONS IN MILLIEQUIVALENTS CALCULATIONS

QUESTION 11

HOW TO SOLVE FOR MILLIEQUIVALENTS OF AN ION GIVEN THE MASS AND MOLECULAR WEIGHT

How many mEqs of K+ are present in 750 mg of a KCl capsule? [K+ = 39, Cl- = 35.5]

QUESTION 12

HOW TO SOLVE FOR THE QUANTITY OF A SALT NEEDED TO SUPPLY A GIVEN MILLIEQUIVALENT OF AN ION

How many grams of CaCl2 are required to prepare a 1 gallon solution that contains 20 mEq of calcium ions? [mw CaCl2 = 111g/mol]

QUESTION 13

HOW TO SOLVE FOR THE QUANTITY OF A SALT NEEDED TO SUPPLY A GIVEN MILLIEQUIVALENT OF AN ION

If a prescription calls to dispense 8 fl oz of KCl in such a way that 1 teaspoonful of solution contains 0.5 mEqs of drug, how many grams of KCl are required to prepare the above prescription? [mw of KCl = 74.5g/mol]

QUESTION 14

HOW TO SOLVE FOR THE QUANTITY OF A SALT NEEDED TO SUPPLY A GIVEN MILLIEQUIVALENT OF AN ION GIVEN THE CONCENTRATION OF THE SOLUTION

You receive a prescription for 240 mL of a potassium citrate solution with a concentration of 15 mEq/15mL. How much potassium citrate must you weigh out to compound this prescription? (MW of $C_6H_5K_3O_7$ = 306)

OSMOLARITY

PRACTICE USING KEY EQUATIONS IN OSMOLARITY CALCULATIONS

QUESTION 15

HOW TO CALCULATE OSMOLARITY GIVEN THE CONCENTRATION OF THE SOLUTION

How many mOsmols/L are represented by 1000 mL 0.9% sodium chloride solution?

QUESTION 16

HOW TO CALCULATE OSMOLARITY GIVEN THE CONCENTRATION OF THE SOLUTION

How many mOsmols/L are represented by a 50 mL 8.4% sodium bicarbonate solution? [mw = 84 g/mol]

RECONSTITUTION

PRACTICE KEY CONCEPTS IN RECONSTITUTION CALCULATIONS

QUESTION 17

HOW TO CALCULATE THE VOLUME OF A RECONSTITUTED SOLUTION NEEDED TO FILL A PATIENTS ORDER

A patient is ordered a 130 mg dose of a drug in 50 mL of D5W. A vial contains 1 gram of the powdered drug. The drug has a powder volume of 0.4 mL. How many milliliters will be needed to fill the patient order if the concentration after reconstitutions is 250 mg/mL?

QUESTION 18

HOW TO CALCULATE POWDER VOLUME

Your bottle of Amoxil (amoxicillin) says to add 39 mL to the bottle to get a solution of 150 mg/tsp. The total amount in the bottle is 2 g. What is the powder volume?

FLOW RATES

PRACTICE KEY CONCEPTS IN FLOW RATE CALCULATIONS

QUESTION 19

HOW TO DETERMINE FLOW RATE IN DROPS PER MINUTE

Four grams of Levofloxacin (mixed with 500 mL 0.9% NaCl) is administered via slow I.V. infusion over 24 hours. If the I.V. set delivers 10 drops/ml, what would be the rate of flow in drops/ min?

QUESTION 20

HOW TO DETERMINE FLOW RATE OF AN INFUSION PUMP IN MILLILITERS PER HOUR

A 60-kg patient is to receive a constant infusion of dobutamine at a rate of 5 mcg/kg/min. The available solution has a concentration of 0.5 mg/mL. For what rate should the infusion pump be set?

QUESTION 21

HOW TO DETERMINE FLOW RATE IN DROPS PER MINUTE

A patient is receiving an IV 1000 cc per 8 hour. When 600 mL have been run in from the 1-L bag, the physician ordered the remainder to be infused over the next 6 hours. The IV set is calibrated at 10 gtt/mL. What is the new flow rate in drops per minute?

ANSWERS

1. 0.432 mg
2. 4.26 g
3. 49 g
4. 350 mL
5. 29.14 g
6. 3.5 drops/min
7. 153.85 mL
8. 6.25 g
9. 30 mg
10. 100:1
11. 10 mEq
12. 1.11 g
13. 1.788 g
14. 24.48 g
15. 307.7 mOsm/L
16. 2000 mOsm/L
17. 0.52 mL
18. 27.67 mL
19. 3.5 drops/min
20. 36 mL/h
21. 11.1 drops/min

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