

PHAR 632

Millimoles, mEq, Milliosmols

- 1- What is the concentration (%) of solution containing 4mEq/L of KCl?
- 2- How many mEq of KCl are in 1.5 grams of KCl?
- 3- How many milligrams of monobasic sodium phosphate (MW=138) are in 1 millimole?
- 4- Convert 20 mg% of Ca^{++} (MW=40) to mEq/L?
- 5- How many mEq of Na⁺ are present in 250mL of 0.9% NaCl solution? (MW = 58.5 gram/mole)
- 6- What is the concentration in <u>mEq/ ml</u> of solution containing 0.294g/ml of calcium chloride (CaCl₂.2H₂O)? (MW=147)
- 7- What is the concentration in <u>% w/v</u> of solution containing 2mEq/ml of calcium chloride (CaCl₂.2H₂O)?
 (MW=147)
- 8- .What is the concentration of a solution in <u>mEq/100 ml</u>, if the solution contains 0.535% w/v of ammonium chloride (NH₄Cl)? (MW=53.5)
- 9- . A solution contains 0.1g/L of K^+ ions. Express this concentration in terms of milliequivalents per liter? (MW of K^+ =39)
- 10- A solution contains 10mg/100 ml of Ca⁺⁺ ions. Express this concentration in terms of milliequivalents per liter? (MW of Ca⁺⁺ =40).
- 11- A solution contains 5mEq of Mg^{++} ions per liter. Express this concentration in terms of milligrams per liter? (MW of $Mg^{++} = 24$).
- 12- How many mEq of magnesium sulfate are represented in 1 gram of anhydrous magnesium sulfate (MgSO₄)? (MW of MgSO₄=120).
- 13- A solution contains 2.5% of anhydrous dextrose in water for injection. How many milliosmoles per liter are represented by this concentration? (MW of anhydrous dextrose=180).

- 14- A solution contains 50g/L of anhydrous dextrose in water for injection. How many milliosmoles per liter are represented by this concentration? (MW of anhydrous dextrose=180).
- 15- A solution contains 2.78mOsmol/L of anhydrous dextrose in water for injection. How many mg per liter are represented by this concentration? (MW of anhydrous dextrose=180)
- 16-How many mOsmols are in a liter of a 0.9% sodium chloride solution? (MW of NaCl =58.5)
- 17- What is the osmolarity of 250 mL of 9g/L sodium chloride solution? (MW of NaCl =58.5). Is there a difference in the osmolarity of 250 or 1000 mL of the same solution?
- 18- What is the concentration in milligrams/mL of a solution containing 10 mEq of KCl /5mL, MWt of KCl 74.5?
- 19- How many mEq/Liter are present in a solution containing 10 mg% of CaCl₂ ions?
- 20- How many grams of magnesium chloride should be used to prepare 120 mL of a solution intended to contain 3 mEq of magnesium ion / 10 mL (MWt 95)?
- 21- What is the percentage strength of 200 mOsmolar potassium chloride solution?

22- You prepared 10 mL of 10% solution of magnesium acetate (C₄H₆MgO₄) for a patient.

- a. How many millimols, milliequivalents (of Mg $^{+2}$) will the patient receive?
- b. What is the # mOsmol? (MWt 142)
- 23- Calculate the milliequivalents of sodium, potassium and chloride, the millimoles of dextrose and the osmolarity of the following parenteral solution:

Rx

Dextrose 50 g Sodium Chloride 4.5g Potassium Chloride 1.49 g SWFI ad 1000 mL

24-Calculate the number of mOsmols in a 700 mL of normal saline solution.

25-Calculate the number of mOsm/L in a solution of 5% dextrose (M Wt 198) and 0.2% sodium chloride.