

# Koeppen: Berne and Levy Physiology, 6<sup>th</sup> Edition

## Chapter 2: Homeostasis of Body Fluids

### Test Bank

#### Multiple Choice

1. A 100 mmol/L solution of  $\text{MgCl}_2$  would be expected to have an osmolality of:

- A. 50 mOsm/kg  $\text{H}_2\text{O}$
- B. 100 mOsm/kg  $\text{H}_2\text{O}$
- C. 200 mOsm/kg  $\text{H}_2\text{O}$
- D. 300 mOsm/kg  $\text{H}_2\text{O}$
- E. 350 mOsm/kg  $\text{H}_2\text{O}$

ANS: D

2. Three individuals, each weighing 55 kg and each having a plasma  $[\text{Na}^+]$  of 145 mEq/L, are infused with different solutions. Individual A is infused with 1 L of isotonic NaCl (290 mOsm/kg  $\text{H}_2\text{O}$ ); individual B is infused with 1 L of a mannitol solution (290 mOsm/kg  $\text{H}_2\text{O}$ ); and individual C is infused with 1 L of a D5W (5% dextrose) solution (290 mOsm/kg  $\text{H}_2\text{O}$ ). Assuming that there is no urine output, and after complete equilibration of the ECF and ICF, which of these individuals will have a lower plasma  $[\text{Na}^+]$ ?

- A. individual A (NaCl infusion)
- B. individual B (mannitol infusion)
- C. individual C (D5W infusion)
- D. individuals A, B, and C will have the same plasma  $[\text{Na}^+]$

ANS: B

3. Intravenous infusion of 2 L of which of the following solutions will lead to the largest increase in ICF volume?

- A. D<sub>5</sub>W
- B. isotonic NaCl
- C. hypotonic NaCl
- D. hypertonic NaCl

ANS: A

4. Intracellular fluid volume is normally what percent of body weight?

- A. 60%
- B. 40%
- C. 20%
- D. 10%
- E. 5%

ANS: B