361. Which of the following statements is correct regarding diuretics?
   a. Loop diuretics are more likely to cause hyponatremia than thiazide diuretics
   b. The use of diuretics in the perioperative patient is an uncommon cause of hypovolemic hyponatremia.
   c. Thiazide diuretics have their major effect in the proximal tubule.
   d. Loop diuretics have their principal actions in the distal tubule.
   e. Diuretics may be appropriate therapy in cardiogenic pulmonary edema in the postoperative patient.
      Since intravascular volume is one of the variables in patients with cardiogenic pulmonary edema, diuretics may be helpful in reducing total body water and thereby intravascular volume and subsequently extracellular volume.

Correct answer is: e
Postoperative changes in Body Fluid compartments
Reference: page 81

362. Which of the following statements regarding serum sodium is NOT correct?
   a. Hyponatremia may be produced by high concentrations of glucose or mannitol.
      This is a true statement.
   b. A high serum sodium concentration is always associated with a high serum osmolality and hypertonicity.
      This is a true statement.
   c. The extracellular fluid volume status of hyponatremic patients may be high, normal or low.
      This is a true statement.
   d. Diuretics frequently cause hyponatremia.
      This is a true statement.
   e. An osmotic diuresis such as glucosuria is a common cause of hyponatremia.
      This is a true statement.

Correct answer is: d
Hyponatremia
Reference: page 84
363. Which of the following statements regarding hypokalemia is correct?
   a. Diuretics rarely cause hypokalemia.
      Diuretics frequently cause hypokalemia.
   b. The degree of hypokalemia correlates very well with total body potassium deficit.
      The degree of hypokalemia poorly correlates with total body potassium deficit.
   c. Hypokalemia in patients who are vomiting is primarily due to renal potassium losses.
      Hypokalemia in patients who are vomiting is primarily due to renal potassium losses.
   d. Metabolic acidosis may contribute to renal potassium wasting.
      Metabolic acidosis does not contribute to renal potassium wasting, but metabolic alkalosis does.
   e. High levels of aldosterone stimulate potassium reabsorption in the distal tubule.
      High levels of aldosterone stimulate potassium excretion in the distal tubule.
Correct answer is: c
   Electrolyte disturbances/hyponatremia.
Reference: page 84

365. A 72 year old woman from a nursing home is admitted to the hospital with severe volume depletion. Her serum sodium is 180 mEq/L and she weighs 45 kg. Her estimated relative free water deficit is:
   a. 3 liters
      N/A
   b. 4 liters
      N/A
   c. 5 liters
      N/A
   d. 6 liters
      Please refer to the formula free water deficit equals body weight x 0.6 x (1 - 140/actual serum sodium).
   e. 7.2 liters
      N/A
Correct answer is: d
   Electrolyte Disturbances - Hyponatremia.
Reference: page 84
366. All of the following may lead to hyperkalemia EXCEPT:
   a. Addison's disease
      This condition is associated with decreased renal excretion of potassium
   b. Potassium-sparing diuretics
      Because potassium excretion is decreased, hyperkalemia can result.
   c. Angiotensin converting enzyme inhibitors
      ACE inhibitors cause decreased excretion of furosemide and can be associated with hyperkalemia.
      This diuretic is a loop diuretic and may be associated with hypokalemia not hyperkalemia.
   d. Cyclosporine
      The use of Cyclosporine can cause renal damage and decreased excretion of potassium followed by
      hyperkalemia.
   e. Chronic gastric outlet obstruction
      Gastric outlet obstruction is associated with persistent vomiting which leads to hypochloremic
      hypokalemia alkalosis.

Correct answer is: e
Hyperkalemia.
Reference: page 87

367. All of the following electrocardiographic changes may result from hyperkalemia EXCEPT:
   a. Peaked T waves
      N/A
   b. Prolonged PR interval
      N/A
   c. Widening of the QRS complex
      N/A

   d. Development of new Q waves
      The development of new Q waves is indicative of an acute myocardial infarction and is not a
      characteristic of hyperkalemia.
   e. Loss of P waves
      N/A

Correct answer is: d
Electrolyte Disturbances - Hyperkalemia.
Reference: page 87
368. All of the following agents may be used to treat hyperkalemia EXCEPT:
   a. Oral Kayexalate  
      N/A
   b. Intravenous sodium bicarbonate  
      N/A
   c. Intravenous calcium gluconate  
      N/A
   d. Intravenous glucose and insulin  
      N/A
   e. Intravenous magnesium chloride  
      Intravenous magnesium chloride is used to treat hypomagnesemia and hypocalcemia, but does not affect hyperkalemia.
Correct answer is: e  
Electrolyte Disturbance - Hyperkalemia.  
Reference: page 84

369. All of the following are associated with hypomagnesemia EXCEPT:
   a. Diuretics  
      Magnesium is often wasted in the urine of patients on diuretics, especially those who produce an osmotic diuresis.
   b. Alcoholics  
      Chronic alcoholics often have hypomagnesemia.
   c. Poor oral intake  
      Poor oral intake and malnutrition are often associated with hypomagnesemia.
   d. Oral potassium supplements  
      Oral potassium supplements have no effect on magnesium balance.
   e. Previous treatment with cisplatin  
      Previous treatment with cisplatin may be associated with renal impairment and increased loss of magnesium.
Correct answer is: d  
Hypomagnesemia  
Reference: page 62
370. All of the following clinical circumstances may lead to metabolic acidosis EXCEPT:
   a. Chronic diarrhea
      This is a true statement.
   b. Vomiting
      Patients with vomiting will lose volume and hydrochloric acid, which will lead to a metabolic
      alkalosis.
   c. Renal tubular acidosis
      This is a true statement.
   d. Ingesting of ethylene glycol
      This is a true statement.
   e. Prolonged hypotension
      This is a true statement.
Correct answer is: b
Electrolyte Disturbances - Metabolic Acidosis.
Reference: page 89

371. All of the following statements are correct regarding Starling forces EXCEPT:
   a. Fluid leaves the capillary at the arterial end because oncotic pressure exceeds hydrostatic
      pressure.
      Fluid leaves the capillary at the arterial end because hydrostatic pressure exceeds oncotic
      pressure.
   b. Hydrostatic pressure falls along the capillary.
      This is a correct statement.
   c. Oncotic pressure increases along the capillary.
      This is a correct statement.
   d. Fluid returns from the interstitium to the capillary at the venous end.
      This is a correct statement.
   e. Serum albumin is the major determinant of capillary colloid osmotic pressure.
      This is a correct statement.
Correct answer is: a
Normal Fluid Spaces and Dynamics.
Reference: page 81