1. A client’s nursing diagnosis is Deficient Fluid Volume related to excessive fluid loss. Which action related to the fluid management should be delegated to a nursing assistant?
   a. Administer IV fluids as prescribed by the physician.
   b. Provide straws and offer fluids between meals.
   c. Develop plan for added fluid intake over 24 hours.
   d. Teach family members to assist client with fluid intake.

2. The client also has the nursing diagnosis Decreased Cardiac Output related to decreased plasma volume. Which finding on assessment supports this nursing diagnosis?
   a. Flattened neck veins when client is in supine position.
   b. Full and bounding pedal and post-tibial pulses.
   c. Pitting edema located in feet, ankles, and calves.
   d. Shallow respirations with crackles on auscultation.

3. The nursing care plan for the client with dehydration includes interventions for oral health. Which interventions are within the scope of practice for the LPN/LVN being supervised by the nurse? (Choose all that apply.)
   a. Remind client to avoid commercial mouthwashes.
   b. Encourage mouth rinsing with warm saline.
   c. Assess lips, tongue, and mucous membranes.
   d. Provide mouth care every 2 hours while client is awake.
   e. Seek dietary consult to increase fluids on meal trays.

4. The physician has written the following orders for the client with Excess Fluid volume. The client’s morning assessment includes bounding peripheral pulses, weight gain of 2 pounds, pitting ankle edema, and moist crackles bilaterally. Which order takes priority at this time?
   a. Weight client every morning.
   b. Maintain accurate intake and output.
   c. Restrict fluid to 1500 mL per day.
   d. Administer furosemide (Lasix) 40 mg IV push.

5. You have been pulled to the telemetry unit for the day. The monitor informs you that the client has developed prominent U waves. Which laboratory value should you check immediately?
   a. Sodium.
   b. Potassium.
   c. Magnesium.
   d. Calcium.

6. The client’s potassium level is 6.7 mEq/L. Which intervention should you delegate to the student nurse under your supervision?
   a. Administer Kayexalate 15 g orally.
   b. Administer spironolactone 25 mg orally.
   c. Assess WCG strip for tall T waves.
d. Administer potassium 10 mEq orally

7. A client is admitted to the unit with a diagnosis of syndrome of inappropriate antidiuretic hormone secretion (SIADH). For which electrolyte abnormality will you be sure to monitor?
   a. Hypokalemia
   b. Hyperkalemia
   c. Hyponatremia
   d. Hypernatremia

8. The charge nurse assigned in the care for a client with acute renal failure and hypernatremia to you, a newly graduated RN. Which actions can you delegate to the nursing assistant?
   a. Provide oral care every 3-4 hours
   b. Monitor for indications of dehydration
   c. Administer 0.45% saline by IV line
   d. Assess daily weights for trends

9. The experienced LPN/LVN reports that a client’s blood pressure and heart rate have decreased and that when the face is assessed, one side twitches. What action should you take at this time?
   a. Reassess the client’s blood pressure and heart rate
   b. Review the client’s morning calcium level
   c. Request a neurologic consult today
   d. Check the client’s papillary reaction to light

10. You are preparing to discharge a client whose calcium level was low but is now just slightly within the normal range (9-10.5 mg/dL). Which statement by the client indicates the need for additional teaching?
    a. “I will call my doctor if I experience muscle twitching or seizures.”
    b. “I will make sure to take my vitamin D with my calcium each day.”
    c. “I will take my calcium pill every morning before breakfast.”
    d. “I will avoid dairy products, broccoli, and spinach when I eat.”

11. A nursing assistant asks why the client with a chronically low phosphorus level needs so much assistance with activities of daily living. What is your best response?
    a. “The client’s low phosphorus is probably due to malnutrition.”
    b. “The client is just worn out from not getting enough rest.”
    c. “The client’s skeletal muscles are weak because of the low phosphorus.”
    d. “The client will do more for herself when her phosphorus is normal”

12. You are reviewing a client’s morning laboratory results. Which of these results is of most concern?
    a. Serum potassium 5.2 mEq/L
    b. Serum sodium 134 mEq/L
    c. Serum calcium 10.6 mg/dL
    d. Serum magnesium 0.8 mEq/L

13. You are the charge nurse. Which client is most appropriate to assign to the step-down unit nurse pulled to the intensive care unit for the day?
a. A 68-year-old client on ventilator with acute respiratory failure and respiratory acidosis
b. A 72-year-old client with COPD and normal arterial blood gases (ABGs) who is ventilator-dependent
c. A 56-year-old new admission client with diabetic ketoacidosis (DKA) on an insulin drip
d. A 38-year-old client on a ventilator with narcotic overdose and respiratory alkalosis

14. A client with respiratory failure is receiving mechanical ventilation and continues to produce ABG results indicating respiratory acidosis. Which action should you expect to correct this problem?
   a. Increase the ventilator rate from 6 to 10 per minute
   b. Decrease the ventilator rate from 10 to 6 per minute
   c. Increase the oxygen concentration from 30% to 40%
   d. Decrease the oxygen concentration from 40% to 30%

15. Which action should you delegate to the nursing assistant for the client with diabetic ketoacidosis? (Choose all that apply.)
   a. Check fingerstick glucose every hour.
   b. Record intake and output every hour.
   c. Check vital signs every 15 minutes.
   d. Assess for indicators of fluid imbalance.

16. You are admitting an elderly client to the medical unit. Which factor indicates that this client has a risk for acid-base imbalances?
   a. Myocardial infarction 1 year ago
   b. Occasional use of antacids
   c. Shortness of breath with extreme exertion
   d. Chronic renal insufficiency

17. A client with lung cancer has received oxycodone 10 mg orally for pain. When the student nurse assesses the client, which finding should you instruct the student to report immediately?
   a. Respiratory rate of 8 to 10 per minute
   b. Pain level decreased from 6/10 to 2/10
   c. Client requests room door be closed.
   d. Heart rate 90-100 per minute

18. The nursing assistant reports to you that a client seems very anxious and that vital signs included a respiratory rate of 38 per minute. Which acid-base imbalance should you suspect?
   a. Respiratory acidosis
   b. Respiratory alkalosis
   c. Metabolic acidosis
   d. Metabolic alkalosis

19. A client is admitted to the unit for chemotherapy. To prevent an acid-base problem, which of the following would you instruct the nursing assistant to report?
   a. Repeated episodes of nausea and vomiting
   b. Complaints of pain associated with exertion
   c. Failure to eat all food on breakfast tray
d. Client hair loss during morning bath

20. A client has a nasogastric tube connected to intermittent wall suction. The student nurse asks why the client’s respiratory rate has increased. What your best response?
   a. “It’s common for clients with uncomfortable procedures such as nasogastric tubes to have a higher rate to breathing.”
   b. “The client may have a metabolic alkalosis due to the NG suctioning and the increased respiratory rate is a compensatory mechanism.”
   c. “Whenever a client develops a respiratory acid-base problem, increasing the respiratory rate helps correct the problem.”
   d. “The client is hyperventilating because of anxiety and we will have to stay alert for development of a respiratory acidosis.”
RATIONALE
FLUID, ELECTROLYTE, AND ACID-BASE PROBLEMS

1. **ANSWER B** – The nursing assistant can reinforce additional fluid intake once it is part of the care plan. Administering IV fluids, developing plans, and teaching families require additional education and skills that are within the scope of practice for the RN.

2. **ANSWER A** – Normally, neck veins are distended when the client is in the supine position. The veins flatten as the client moves to a sitting position. The other three responses are characteristic of Excess Fluid Volume.

3. **ANSWER A, B, C, D** – The LPN/LVN’s scope of practice and educational preparation includes oral care and routine observation. State practice acts vary as to whether LPN/LVNs are permitted to perform assessment. The client should be reminded to avoid most commercial mouthwashes that contain alcohol, a drying agent. Initiating a dietary consult is within the purview of the RN or physician.

4. **ANSWER D** – Bilateral moist crackles indicate fluid-filled alveoli, which interferes with gas exchange. Furosemide is a potent loop diuretic that will help mobilize the fluid in the lungs. The other orders are important but not urgent.

5. **ANSWER B** – Suspect hypokalemia and check the client’s potassium level. Common ECG changes with hypokalemia include ST depression, inverted T waves, and prominent U waves. Client with hypokalemia may also develop heart block.

6. **ANSWER A** – The client’s potassium level is high (normal range 3.5-5.0). Kayexalate removes potassium from the body through the gastrointestinal system. Spironolactone is a potassium-sparing diuretic that may cause the client’s potassium level to go even higher. The nursing student may not have the skill to assess ECG strips and this should be done by the RN.

7. **ANSWER C** - SIADH causes a relative sodium deficit due to excessive retention of water.

8. **ANSWER A** – Providing oral care is within the scope of practice for the nursing assistant. Monitoring and assessing clients, as well as administering IV fluids, require the additional education and skill of the RN.

9. **ANSWER B** – A positive Chvostek’s sign (facial twitching of one side of the mouth, nose, and cheek in response to tapping the face just below and in front of the ear) is a neurologic manifestation of hypocalcemia. The LPN/LVN is experienced and possesses the skills to take accurate vital signs.

10. **ANSWER D** – Clients with low calcium levels should be encouraged to consume dairy products, seafood, nuts, broccoli, and spinach. Which are all good sources of dietary calcium.
11. **ANSWER C** – A musculoskeletal manifestation of low phosphorous is generalized muscle weakness that may lead to acute muscle breakdown (rhabdomyolysis). Even though the other statements are true, they do not answer the nursing assistant’s question.

12. **ANSWER D** – While all of these laboratory values are outside of the normal range, the magnesium is most outside of normal. With a magnesium level this low, the client is at risk for ECG changes and life-threatening ventricular dysrhythmias.

13. **ANSWER B** – The client with COPD, although ventilator dependent, is the most stable of this group. Clients with acid-base imbalances often require frequent laboratory assessment and changes in therapy to correct their disorders. In addition, the client with DKA is a new admission and will require an in-depth admission assessment. All three of these clients need care from an experienced critical care nurse.

14. **ANSWER A** – The blood gas component responsible for respiratory acidosis is CO₂ (Carbon dioxide). Increasing the ventilator rate will blow off more CO₂ and decrease the acidosis. Changes in the oxygen setting may improve oxygenation but will not affect respiratory acidosis.

15. **ANSWER B, C** – The nursing assistant’s training and education include how to take vital signs and record intake and output. The need to take vital signs this frequently indicates that the client may be unstable. The nurse should give the nursing assistant reporting parameters when delegating this action, should also check the vital signs for indications in instability. Performing fingerstick glucose checks and assessing clients require additional education and skill that are appropriate to licensed nurses. Some facilities may train experienced nursing assistants to perform fingerstick glucose checks and change their role descriptions to designate their new skills, but this is beyond the normal scope of practice for a nursing assistant.

16. **ANSWER D** – Risk factors for acid-base imbalances in the older adult include chronic renal disease and pulmonary disease. Occasional antacid use will not cause imbalances, although antacid abuse is a risk factor for metabolic alkalosis.

17. **ANSWER A** – A decreased respiratory rate indicates respiratory depression which also puts the client at risk for respiratory acidosis. All of the other findings are important and should be reported to the RN, but the respiratory rate is urgent.

18. **ANSWER B** – The client is most likely hyperventilating and blowing off CO₂. This decrease in CO₂ will lead to an increase in pH, causing respiratory alkalosis. Respiratory acidosis results from respiratory depression and retained CO₂. Metabolic acidosis and alkalosis result from problems related to renal acid-base control.

19. **ANSWER A** – Prolonged nausea and vomiting can result in acid deficit that can lead to metabolic alkalosis. The other findings are important and need to be assessed but are not related to acid-base imbalances.
20. **ANSWER B** – Nasogastric suctioning can result in a decrease in acid components and metabolic alkalosis. The client’s increase in rate and depth of ventilation is an attempt to compensate by blowing off CO₂. The first response maybe true but does not address all the components of the question. The third and fourth answers are inaccurate.