**MODULE 1: THE CONCEPT OF ACID–BASE BALANCE**

**Exemplar 1.A: Metabolic Acidosis**

**Relate**

The ambulance arrives with a patient who presents with Kussmaul respirations and a history of diabetes mellitus.

**Linking the exemplar of metabolic acidosis with the concept of metabolism:**

**Question 1**

Based on the patient’s history, what impact does the nurse expect to find on acid–base balance?

**Answer 1**

This patient will likely have decreased plasma pH, decreased PaCO2, normal or decreased HCO3, and compensated increased urine pH. He is likely in diabetic ketoacidosis.

**Question 2**

When the nurse is assessing this patient, what symptoms would be directly related to alterations in pH?

**Answer 2**

This patient will have ketones in his urine. The metabolic acidosis is compensated for by CO2 excretion by the lungs. This is the Kussmaul breathing.

**Linking the exemplar of metabolic acidosis with the concept of fluids and electrolytes:**

**Question 3**

When assessing the patient, what electrolyte imbalances should the nurse monitor in acidosis?

**Answer 3**

In respiratory acidosis, potassium imbalance such as hyperkalemia may occur. In metabolic acidosis, potassium imbalance such as hypokalemia may occur.

**Question 4**

What signs of dehydration will the nurse observe in a patient in acute metabolic acidosis?

**Answer 4**

Signs and symptoms of metabolic acidosis vary with the severity of the acidosis. Fluid replacement with potassium supplementation is required in the acute diabetic state.

**Linking the exemplar of metabolic acidosis with the concept of safety**

**Question 5**

What precautions should the nurse implement for the patient with metabolic acidosis to prevent potential injury?

**Answer 5**

This patient may need to be restrained secondary to confusion for his safety. Make sure side rails are up because of drowsiness and confusion. Patient may need to be turned on side to prevent aspiration if there is nausea or vomiting.

**Question 6**

The patient with metabolic acidosis becomes confused and disoriented. What nursing care should the nurse provide to this patient to maintain safety?

**Answer 6**

This patient may need to be restrained, the side rails up, or 1:1 care to prevent fall or injury.