

### QUESTION

1. A patient with a long history of chronic kidney disease (CKD) is being treated with a diuretic. The patient's serum sodium level is 125 mEq/L. The patient's serum potassium level is 2.5 mEq/L. The patient's serum calcium level is 8.5 mg/dL. The patient's serum phosphate level is 2.5 mg/dL. The patient's serum magnesium level is 0.5 mg/dL. The patient's serum bicarbonate level is 15 mEq/L. The patient's serum creatinine level is 3.0 mg/dL. The patient's serum urea nitrogen level is 25 mg/dL. The patient's serum albumin level is 3.5 g/dL. The patient's serum total protein level is 6.5 g/dL. The patient's serum globulin level is 3.0 g/dL. The patient's serum albumin to globulin ratio is 1.17. The patient's serum osmolality is 275 mOsm/kg. The patient's serum anion gap is 12 mEq/L. The patient's serum lactate level is 1.5 mmol/L. The patient's serum ketone level is negative. The patient's serum glucose level is 100 mg/dL. The patient's serum insulin level is 1.5 mU/L. The patient's serum C-peptide level is 0.5 ng/mL. The patient's serum proinsulin level is 1.5 pmol/L. The patient's serum insulin to C-peptide ratio is 3.0. The patient's serum proinsulin to C-peptide ratio is 3.0. The patient's serum insulin to proinsulin ratio is 1.0. The patient's serum C-peptide to proinsulin ratio is 1.0. The patient's serum insulin to C-peptide ratio is 3.0. The patient's serum proinsulin to C-peptide ratio is 3.0. The patient's serum insulin to proinsulin ratio is 1.0. The patient's serum C-peptide to proinsulin ratio is 1.0.

| Parameter                           | Value       |
|-------------------------------------|-------------|
| Serum sodium                        | 125 mEq/L   |
| Serum potassium                     | 2.5 mEq/L   |
| Serum calcium                       | 8.5 mg/dL   |
| Serum phosphate                     | 2.5 mg/dL   |
| Serum magnesium                     | 0.5 mg/dL   |
| Serum bicarbonate                   | 15 mEq/L    |
| Serum creatinine                    | 3.0 mg/dL   |
| Serum urea nitrogen                 | 25 mg/dL    |
| Serum albumin                       | 3.5 g/dL    |
| Serum total protein                 | 6.5 g/dL    |
| Serum globulin                      | 3.0 g/dL    |
| Serum albumin to globulin ratio     | 1.17        |
| Serum osmolality                    | 275 mOsm/kg |
| Serum anion gap                     | 12 mEq/L    |
| Serum lactate                       | 1.5 mmol/L  |
| Serum ketone                        | Negative    |
| Serum glucose                       | 100 mg/dL   |
| Serum insulin                       | 1.5 mU/L    |
| Serum C-peptide                     | 0.5 ng/mL   |
| Serum proinsulin                    | 1.5 pmol/L  |
| Serum insulin to C-peptide ratio    | 3.0         |
| Serum proinsulin to C-peptide ratio | 3.0         |
| Serum insulin to proinsulin ratio   | 1.0         |
| Serum C-peptide to proinsulin ratio | 1.0         |

2. A patient with a long history of chronic kidney disease (CKD) is being treated with a diuretic. The patient's serum sodium level is 125 mEq/L. The patient's serum potassium level is 2.5 mEq/L. The patient's serum calcium level is 8.5 mg/dL. The patient's serum phosphate level is 2.5 mg/dL. The patient's serum magnesium level is 0.5 mg/dL. The patient's serum bicarbonate level is 15 mEq/L. The patient's serum creatinine level is 3.0 mg/dL. The patient's serum urea nitrogen level is 25 mg/dL. The patient's serum albumin level is 3.5 g/dL. The patient's serum total protein level is 6.5 g/dL. The patient's serum globulin level is 3.0 g/dL. The patient's serum albumin to globulin ratio is 1.17. The patient's serum osmolality is 275 mOsm/kg. The patient's serum anion gap is 12 mEq/L. The patient's serum lactate level is 1.5 mmol/L. The patient's serum ketone level is negative. The patient's serum glucose level is 100 mg/dL. The patient's serum insulin level is 1.5 mU/L. The patient's serum C-peptide level is 0.5 ng/mL. The patient's serum proinsulin level is 1.5 pmol/L. The patient's serum insulin to C-peptide ratio is 3.0. The patient's serum proinsulin to C-peptide ratio is 3.0. The patient's serum insulin to proinsulin ratio is 1.0. The patient's serum C-peptide to proinsulin ratio is 1.0.

### ANSWER



3. A patient with a long history of chronic kidney disease (CKD) is being treated with a diuretic. The patient's serum sodium level is 125 mEq/L. The patient's serum potassium level is 2.5 mEq/L. The patient's serum calcium level is 8.5 mg/dL. The patient's serum phosphate level is 2.5 mg/dL. The patient's serum magnesium level is 0.5 mg/dL. The patient's serum bicarbonate level is 15 mEq/L. The patient's serum creatinine level is 3.0 mg/dL. The patient's serum urea nitrogen level is 25 mg/dL. The patient's serum albumin level is 3.5 g/dL. The patient's serum total protein level is 6.5 g/dL. The patient's serum globulin level is 3.0 g/dL. The patient's serum albumin to globulin ratio is 1.17. The patient's serum osmolality is 275 mOsm/kg. The patient's serum anion gap is 12 mEq/L. The patient's serum lactate level is 1.5 mmol/L. The patient's serum ketone level is negative. The patient's serum glucose level is 100 mg/dL. The patient's serum insulin level is 1.5 mU/L. The patient's serum C-peptide level is 0.5 ng/mL. The patient's serum proinsulin level is 1.5 pmol/L. The patient's serum insulin to C-peptide ratio is 3.0. The patient's serum proinsulin to C-peptide ratio is 3.0. The patient's serum insulin to proinsulin ratio is 1.0. The patient's serum C-peptide to proinsulin ratio is 1.0.