**Question 1**

At which site(s) is potassium ion secreted?

Select one:

a. Proximal tubule and distal tubule

b. Thin limb of the loop of Henle only

c. Distal tubule and collecting duct

d. Thin limb and thick limb of the loop of Henle

Answer C. Ganong 23rd Edition pg 659 “secreted by the distal tubular cells”

**Question 2**

In chronic acidosis, the major adaptive buffering system in the urine is:

Select one:

a. HCO3

b. Carbamino compounds

c. Histidine residues

d. Ammonia

Answer D. Ganong 23rd Edition pg 684 “chronic acidosis…additional source of ammonia”

**Question 3**

Regarding buffers:

Select one:

a. The effective buffers are those with pk’s close to the pH in which they operate

b. Haemoglobin is the most effective buffer

c. Oxyhaemoglobin is a better buffer than deoxyhaemoglobin

d. Buffers in blood include proteins and phosphates

Answer A. Ganong 23rd Edition pg 4 “best when the pK of that acid is equal to the pH of the solution”

**Question 4**

Regarding renal compensation in respiratory acidosis and alkalosis:

Select one:

a. HCO3 reabsorption depends upon the rate of H+ secretion by renal tubular cells

b. In respiratory acidosis, HCO3 reabsorption is reduced

c. The rate of HCO3 reabsorption is inversely proportional to the arterial PCO2

d. In respiratory alkalosis, renal H+ secretion is increased

Answer A. Ganong 23rd Edition pg 680 “H+ is removed from the tubule…HCO3 is reabsorbed”

**Question 5**

Regarding the kidney and urine formation:

Select one:

a. The thin ascending limb is relatively impermeable to water

b. Water diuresis begins about an hour after ingestion of a water load

c. The thin ascending limb is relatively impermeable to sodium chloride

d. A high protein diet does not affect the concentrating ability of the kidney

Answer A. Ganong 23rd Edition pg 653 “ascending limb is impermeable to water”

**Question 6**

Regarding the osmolality of tubular fluid:

Select one:

a. Hypertonic in the ascending limb of the loop of Henle

b. Isotonic in the loop of Henle

c. Isotonic in proximal tubule

d. Hypotonic in the collecting duct

Answer C. Ganong 23rd Edition pg 653 figure 38-14

**Question 7**

Regarding the renal handling of bicarbonate ion, which is INCORRECT?

Select one:

a. Reabsorption requires carbonic anhydrase

b. Small size of bicarbonate ion affects reabsorption

c. Most reabsorption occurs in the proximal tubule

d. Reabsorption is decreased by ECF expansion

Answer B. Ganong 23rd Edition pg 680

**Question 8**

These blood gases (pH 7.32, pCO2 31 mmHg, bicarb 20 mmol/L) represent:

Select one:

a. A partially compensated metabolic acidosis

b. A primary metabolic acidosis

c. A primary respiratory alkalosis

d. A mixed respiratory acidosis and metabolic acidosis

Answer A. Ganong 23rd Edition pg 615 table 36-3 “metabolic acidosis”

**Question 9**

Which of the following is NOT true regarding the voiding reflex?

Select one:

a. It is integrated in the sacral segments of the spinal cord

b. It involves parasympathetic fibres

c. It occurs when the bladder volume reaches 300 – 400 mls

d. It remains intact in the period of spinal shock following transection of the spinal cord

Answer D. Ganong 23rd Edition pg 662 “during spinal shock, the bladder is unresponsive”

**Question 10**

As urine flow increases during osmotic diuresis:

Select one:

a. The osmolality of urine falls

b. The osmolality of urine increases

c. The osmolality of urine approaches that of plasma

d. The osmolality of urine is unchanged

Answer C. Ganong 23rd Edition pg 657 figure 38-18