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NAM[redacted] S[redacted]

QUIZ 6

Directions: Fill in your **name** and **Student number** (**REMEMBER YOUR STUDENT NUMBER !!**) in a **legible** manner (if I can't read it, I can't give credit).

Problem(s): Calculate the answer to the problem & fill in at the space provided.

Single Choice: Circle the correct answer or **Neatly** write the letter corresponding to the correct answer next to the question.

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1. Which one of the following statements is **FALSE** ?

   a. If intracellular Ca^{++} concentrations begin to fall, tension in SUVSM (single unit visceral smooth muscle) can be maintained due to latch bridge formation.
   b. When SUVSM cells are rapidly stretched and held at a new length, they respond with a sustained contraction.
   c. The afferents & efferents of long and short arc GI reflexes must always act through the plexi of the GI tract.
   d. When activated, MLCK (myosin light chain kinase) phosphorylates 40 % of myosin the myosin heads; the tension generated is nearly 100 % of maximal.

2. What would happen if the myenteric plexus at the level of the LES (lower esophageal sphincter) were damaged ?

   a. Nothing extraordinary compared to appropriate normal controls.
   b. The LES would remain open creating conditions for gastric reflux.
   c. Receptive relaxation of the LES would be enhanced.
   d. The LES would tend to remain closed creating conditions for achalasia.
   e. Choices b & c are both correct.

3. If the rate of salivation (ml/min) were to **decrease** from a high rate, then:

   a. saliva would become progressively more hypertonic.
   b. the HCO_3^- concentration would increase.
   c. salivary Na^+ concentration would tend to decrease.
   d. salivary Cl^- concentrations would tend to rise.

4. Bile and pancreatic juice interact such that:

   a. bile will carry the products of pancreatic lipase action through the unstirred water layer to the mucosa.
   b. bile will tend to inhibit the action of pancreatic lipase (steric hinderance).
   c. fat absorption is severely impaired in the absence of bile, even with normal levels of pancreatic juice.
   d. Choices a, b & c are all correct.

5. Water and electrolyte absorption in the colonic mucosa differs from other regions in that:

B

a. the colonic tight junctions are, in reality, very porous.
b. Cl^- is reabsorbed from the intestine due to the electrostatic forces set up due to the presence of truely "tight" tight junctions.
c. the colon is normally the main site for reabsorption of water and electrolytes.
d. the crypts of the ileum are the principle site for water & electrolyte reabsorption.

6 Surgical removal of the duodenum (for a malignancy) would interfere with which of the following processes ?

a. Regulation of gastric secretion.
b. Regulation of gastric emptying.
c. Absorption of bile.
d. B_{12} absorption.
e. Choices a & b are correct.

7. A patient of yours has a bout of prolonged vomiting. What impact does this have on the acid-base status of your patient ?

a. Vomiting results in metabolic alkalosis.
b. Vomiting results in the loss of HCO_3^- resulting in metabolic acidosis. ✗
c. Hyperventilation partially compensates for the acid-base disturbance.
d. Increased HCO3- synthesis & reabsorption partially compensates for the acid-base disturbance. ✗

8. If cardiac output is increased, then central venous pressure would, in a normal heart:

a. increase.
b. decrease.
c. not change.

$CO_2 + H_2O \rightleftharpoons H_2CO_3 \rightleftharpoons H^+ + HCO_3^-$