7/10

QUIZ 11/4

D

1. Formation of a highly concentrated urine is dependent upon
A. Elevated levels of vasopressin in the plasma
B. Elevated levels of aldosterone in the plasma
C. Active transport of Na+ and Cl- by the descending limb of the loops of Henle
D. Both A and B
E. All of the choices are correct

E

2. In terms of the amount of water lost or conserved through urine formation, which region(s) of the renal tubule demonstrate the highest degree of variability?
A. The glomerulus
B. Proximal convoluted tubule
C. Loop of Henle
D. Distal convoluted tubule
E. Cortical and medullary collecting ducts

E

3. Which of the following most accurately describes the actions of aldosterone?
A. Aldosterone increases Na+ secretion and K+ reabsorption in the cortical collecting ducts
B. Aldosterone increases Na+ reabsorption and K+ secretion in the proximal tubule
C. Aldosterone decreases Na+ reabsorption and K+ secretion in the cortical collecting ducts
D. Aldosterone increases Na+ secretion and K+ reabsorption in the proximal tubule
E. Aldosterone increases Na+ reabsorption and K+ secretion in the cortical collecting ducts

B

4. Vasopressin/antidiuretic hormone
A. Is a peptide hormone released from the adrenal gland
B. Triggers insertion of aquaporins into the luminal membranes of collecting ducts
C. Promotes the excretion of water into urine
D. Promotes the secretion of potassium into urine
E. All of the choices are correct

B

5. Because of the countercurrent multiplier system in the loop of Henle and the proximity to it of the medullary collecting ducts,
A. Hyperosmotic urine is generated by active salt reabsorption through membranes that are relatively impermeable to water and the diffusion of water through membranes responsive to vasopressin
B. Hypoosmotic urine is generated by active salt reabsorption through membranes impermeable to water and the diffusion of water through membranes responsive to vasopressin
C. Hyperosmotic urine is generated by active salt secretion into the loop of Henle and into the medullary collecting ducts
D. Hypoosmotic urine is generated by active salt secretion into the loop of Henle and into the medullary collecting ducts
E. The body must excrete a dilute urine

A 6. Stimuli for vasopressin secretion include
A. Increased plasma osmolarity
B. Increased plasma volume
C. Ingestion of alcohol
D. Both A and B
E. All of the choices are true

E C 7. A person who is unable to synthesize vasopressin
A. Is unable to reabsorb water in the proximal tubule
B. Will excrete glucose in the urine
C. Will excrete a hypotonic urine
D. Will excrete up to 180 L of urine per day
E. Will do all of these things

A 8. Renin
A. Is secreted by juxtaglomerular cells in renal afferent arterioles
B. Secretion is enhanced by high levels of Na+ in the macula densa
C. Secretion is stimulated by elevated blood pressure in the renal afferent arterioles
D. Acts on the adrenal cortex to stimulate aldosterone secretion
E. Is described by all of these things

E 9. The countercurrent multiplier system of the kidney
A. Allows the kidneys to form hypertonic urine
B. Requires that the collecting ducts be near the loops of Henle
C. Requires active transport of sodium and chloride out of the ascending limb of the loop of Henle
D. Would not function if the ascending limb of the loop of Henle were freely permeable to water
E. Is described by all of these choices

D 10. The amount of a substance that is excreted in the urine is equal to the amount that is _____ plus the amount that is _____ minus the amount that is _____.
A. Filtered; reabsorbed; secreted
B. Reabsorbed; filtered; secreted
C. Secreted; reabsorbed; filtered
D. Filtered; secreted; reabsorbed
E. Reabsorbed; secreted; filtered