Chapter 44.

1) As filtrate moves down the descending loop of Henle, it becomes .

A) More Concentrated

B) Less concentrated

C) More dilute

D) Less Dilute

2) The proximal tubule helps maintain constant……………………………level in body fluids.

A) Water

B) pH

C) Salt

D) Urea

3) A health condition is diagnosed by blood cells and protein detected in patient’s urine. This indicates a health problem at the…

A) Urethra

B) Bowman’s capsule

C) Collecting duct

D) glomerulus

4) From question #1, a presence of the filtrate causes a change in osmolarity of interstitial fluid, rendering it……………………………to the filtrate.

A) Hypo-osmotic

B) Hyper-osmotic

C) Iso-osmotic

D) None of the above.

5) Re-absorption mainly occurs at the

A) Proximal tubules

B) Glomerulus

C) Distal tubules

D) A & C only

E) A & B only

6) The descending limb is more permeable to………………while the ascending limb is more permeable to……………….

A) Salts, water

B) CO2, water

C) Salts, CO2

D) Water, salts

7) The entire system under which the kidneys operate is based on membrane transport and gradients. What type (s) of transport is (are) used by the nephron of the kidney?

A) Active transport

B) Passive transport

C) Filtered transport

D) A & C only

E) A & B only

8) Which of the following are most likely reabsorbed by the proximal convoluted tubule?

A) Glucose

B) Proteins

C) Amino acids

D) Some vitamins

E) B & C only

9) Interstitium is name of the tissue surrounding the tubule and the kidneys are capable of altering it’s osmolarity. In a normal physiological state when leaving the proximal convoluted tubule, the filtrate remains………………..to the interstitium.

A) Isotonic

B) Hypertonic

C) Hypotonic

D) No change since urine is always more concentrated than blood.

10) The final concentration of urine will depend on the permeability of the

A) Distal convoluted tubule

B) Loops of Henle

C) Proximal convoluted tubule

D) A & C only

E) Collecting duct

**Questions 11 & 13.** Write out, using letters, the osmolarity of the following parts of the kidneys relative to the interstitium.

A) Isotonic B) hypertonic C) Hypotonic

11) The Cortex.

12) The Inner Medulla

13) Distal Tubule

14) Which of the following will trigger the release of Aldosterone

A) Hypertension

B) Increase blood volume

C) Hypotension

D) Hyperglycemia

15) The permeability of the collecting duct is directly altered by

A) ADH (vasopressin)

B) Oxytocin

C) Renin

D) Aldosterone

E) A & D only

16) ADH is made in the………………and release when blood osmolarity is too………………..

A) Pituitary gland, low

B) Hypothalamus, high

C) Anterior pituitary, high

D) Posterior pituitary, high

E) Hypothalamus, low

17) Differentiate the effects of ADH to aldosterone, when both are functioning to regulate the kidney re-absorption system. (4 points)

18) Fill in the blanks

|  |  |  |  |
| --- | --- | --- | --- |
| **Stimulus** | **Hormone** | **Response** | **Effect** |
| High blood osmolarity  >300 mOsm | **ADH-** hypothalamus, stored in pituitary gland | 1. | 1.  2.  3. |
| Drop in BP or volume | **Renin-** JGA (kidney), activates angiotensin pathway | Constricts arterioles  Decreases blood flow to kidneys  Stimulates aldosterone release | 1. |
| Angiotensin II | **1.** | Causes distal tubules to reabsorb Na+, H2O follows passively | 1.  2. |
| High blood pressure or volume | ANP- atria in heart | Inhibits release of renin, reduces aldosterone release, inhibits NaCl reabsorption by collecting ducts | 1.  2. |