



# Physiology Test Bank

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*BODY FLUIDS*

PAST QUESTIONS +BOOK QUESTIONS

1. After giving a person healthy intravenous saline solution (isotonic NaCl), the properties

of extracellular fluid will be .....?

- a. Hypertonic and hypervolemic
- b. Isotonic and normovolemic
- c. Isotonic and hypervolemic
- d. Hypotonic and hypervolemic
- e. Hypotonic and normovolemic

Answer : C

2. A 65-year-old man has a 20-year history of nephrotic syndrome (kidney disease). He visits his physician complaining of swelling of his extremities. A decrease in which of the following is one of the most likely cause of his lower limb edema?

- a. Arteriole conductance
- b. Interstitial hydrostatic pressure
- c. Plasma colloid osmotic pressure
- d. Capillary hydrostatic pressure
- e. Interstitial colloid osmotic pressure

Answer : C

3. Listed below are the hydrostatic and oncotic pressures across a muscle capillary wall.

Mean capillary hydrostatic pressure = 25 mmHg. Plasma colloid osmotic pressure = 28

mmHg. Interstitial colloid osmotic pressure = 5 mmHg. Interstitial hydrostatic pressure = 5 mmHg. What is the net filtration pressure (in mmHg) for fluid movement across the

capillary wall?

- a. Cannot be calculated.
- b. 7 mmHg toward reabsorption
- c. 7 mmHg toward filtration
- d. 3 mmHg toward filtration
- e. 3 mmHg toward reabsorption

Answer : C

4. Which of the following pairs are NOT having similar effects on Na<sup>+</sup> level of body fluids:

- a. Increased ADH secretion and drinking of high amounts of portable (normal) water.
- b. High release of aldosterone and ingestion of high amounts of salts
- c. Hypoaldosteronism (decreased aldosterone secretion) and deficiency of ADH
- d. Loss of hypotonic fluids from the body and activation of renin-angiotensinaldosterone system
- e. High release of ANP (atrial natriuretic peptide) and intravenous infusion of hypotonic solution

Answer : C

5. Use the following to answer the question below:

1. Diabetes insipidus (deficiency of ADH)
2. Increased antidiuretic hormone (ADH) secretion.
3. Intravenous infusion of hypotonic solution
4. Drinking of high amounts of potable (normal) water
5. Increased release of aldosterone

Which conditions are having highest potential to cause hypernatremia in extracellular

fluids with dehydration of cells?

- a. 2 and 3
- b. 1 and 5
- c. 2 and 5
- d. 1 and 4
- e. 3 and 5

Answer : B

6. Edema at interstitial fluids can be generated by all the following EXCEPT :

- a. Increased hydrostatic pressure in capillaries.
- b. Decreased lymph flow from interstitial fluids.
- c. Decreased albumin concentration in plasma.
- d. Increased wash down of protein from interstitial fluid
- e. Increased venous pressure.

Answer : D

7. With regard to measurements of body fluids, which of the following is TRUE:

- a.  $^{51}\text{Cr}$ -labeled RBCs can be used for measuring total blood volume.
- b.  $^{40}\text{K}^+$  radioisotope is used for measuring intracellular fluid volume.
- c. Insulin is used to measure intravascular fluid volume.
- d.  $^{125}\text{I}$ -albumin is used to measure interstitial fluids volume.
- e.  $^{22}\text{Na}^+$  radioisotope is used to measure total body fluids.

Answer : A

8. The net loss of fluid from capillaries to the interstitial fluid in the legs is decreased

by:

- a. Decrease plasma albumin.
- b. Lymphatic obstruction and increased interstitial hydrostatic pressure.
- c. Arteriolar dilation to increase capillary pressure.
- d. Change from the recumbent to the standing position
- e. Leg exercise and capillary hydrostatic pressure

Answer : B

9. Which of the following is NOT true with regard to body fluids ?

- a. Higher  $\text{Na}^+$  concentration in extracellular than in intracellular fluid
- b. Higher oncotic pressure is in interstitial fluids than inside vessels.
- c. Both extracellular and intracellular fluids are having isotonic environment
- d. Higher protein content inside cells that in plasma
- e. Almost the same concentration of  $\text{Na}^+$  is found in plasma and interstitial fluids.

Answer : B

10. Which of the following conditions results in increasing volume and decreasing osmolarity of extracellular body fluids?

- a. High release of ANP (atrial natriuretic peptide)
- b. High use of diuretics
- c. High release of ADH
- d. Activation of renin-angiotensin-aldosterone system
- e. Drinking of salty water

Answer : C

11. Which of the following pairs are NOT related to each other ?

- a. Negative pressure ranges in interstitial fluids and Low tissue compliance
- b. Increased capillary permeability and Generation of edema.
- c. Increased colloid pressure in capillaries and Development of edema.
- d. Increased lymph drainage and Wash down of proteins in interstitial fluid.
- e. Hydrostatic pressure in arterial end of capillaries and Filtration

Answer : C

12. Which of the following substances or combinations of substances could be used to measure interstitial fluid volume?

- (A) Mannitol
- (B) D2O alone
- (C) Evans blue
- (D) Inulin and D2O

(E) Inulin and radioactive albumin

ANSWER: E

13. High shift of fluids from intracellular to extracellular compartment can take place by:

- A. high release of ADH
- B. Consumption of potable(normal) water
- C. intravenous infusion of normal saline
- D. intravenous infusion of hypotonic solution
- E . High release of aldosteronr

ANSWER: E

14. In normal person plasma is forming about.....of the total blood volume:

- A.55%
- B.95%
- C.90%
- D.10%
- E.40%

ANSWER:A

15. Na<sup>+</sup> homeostasis is important for controlling al of the followings **EXCEPT**:

- A.BLOOD VOLUME
- B.WATER HOMEOSTASIS
- C.ONCOTIC PRESSURE
- D. EXTRACELLULAR FLID VOLUME

## E.OSMOLALITY

ANSWER: C

16: Edema at interstitial fluids can be generated by all the followings EXCEPT: • A- Increased oncotic pressure in interstitial fluids

- B-Increased albumin concentration in plasma
- C-Increased hydrostatic pressure in capillaries
- D-Decreased lymph flow from interstitial fluids
- E-Increased capillary permeability

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