Blood vessels and capillary filtration

Read Chapter 18.7

Fill in the blanks

1. The largest artery in the body is the _____.
2. Oxygen, carbon dioxide, nutrients, and waste are exchanged in the _____.
3. Most blood volume (approx. 60-65%) is found mainly in the _____.
4. The blood vessels that have the most cross-sectional area in the body are the _____.
5. List the blood vessels in the order of highest (1) to lowest pressure (6).
    a. Capillaries _____
    b. Aorta _____
    c. Veins _____
    d. Arterioles _____
    e. Vena Cavae _____
    f. Venules _____
6. The _____ have valves to prevent the backflow of blood.
7. The _____ play a very important role in the regulation of blood flow to the specific regions of the body through vasoconstriction and vasodilation.
8. Carbon dioxide and waste products leave the cells, enter the capillaries, and are expelled or broken down once they circulate to the main organs involved in excretion:
    a. _____
    b. _____
    c. _____
9. Each capillary bed has _____, which are small circular smooth muscles that block blood flow to certain capillary beds when they contract.
10. Match the following descriptions with the correct term.

Interstitial fluid, Plasma, Lymph

    a. Fluid found within the blood vessels _____
    b. Fluid found in the lymphatic vessels _____
    c. Fluid found surrounding cells _____

11. Match the following descriptions with the correct term.

Capillary osmotic, Capillary hydrostatic, Interstitial osmotic, Interstitial hydrostatic

a. A capillary pressure that pushes fluid out of the capillaries into the interstitial space _____

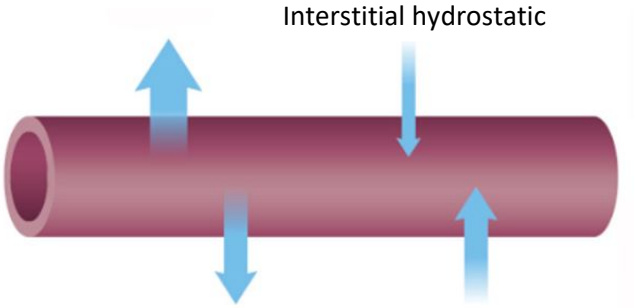
b. An interstitial pressure that prevents excess fluid from moving from the capillaries into the interstitial space _____

c. A capillary pressure that holds fluid in the capillary _____

d. An interstitial pressure that pulls fluid into the interstitial space _____

12. During exercise _____pressure increases and causes _____ (more or less) fluid to move out of the capillaries.

13. Label the pressures moving fluid in and out of the capillary.



14. You are given the following pressures. Calculate the net filtration pressure.

Capillary hydrostatic pressure = 35 mmHg
Capillary osmotic pressure = 20 mmHg
Interstitial hydrostatic = 7 mmHg
Interstitial osmotic = 12 mmHg

_____mmHg

15. About _____L of fluid moves from the cardiovascular system to the interstitial spaces and then to the lymphatic system every day.

16. If fluid builds up in the interstitial space, swelling occurs, called _____