

Homework Assignment – Module 8

1. [20 points] Which of the following statements about the circulation is the most correct? Briefly explain why each of the incorrect statements is, indeed, incorrect.
 - A. The pulse pressure in the inferior vena cava is larger than the pulse pressure in the renal artery.
 - B. The total cross-sectional area of all of the arterioles taken together is less than the cross-sectional area of all of the large arteries (taken together).
 - C. Blood flow velocity is less in the capillaries than it is in the superior vena cava.
 - D. Mean blood pressure in the large veins is about equal to mean blood pressure in the large arteries.
2. [20 points] What are the physical characteristics/properties of blood and of blood vessels that affect blood flow through a blood vessel? Which of these characteristics/properties is under physiological control, and, if under control, in what (approximate) time frame? Briefly describe/discuss/explain the mechanism(s) of such control.
3. [20 points] Distinguish between laminar flow and turbulent flow. Where in the circulation is turbulent flow likely to occur? Briefly explain why turbulent flow is likely to occur in those locations.
4. [20 points] Which of the vessels in the circulation (aorta, artery ... vein, vena cavae) has the least connective tissue? Discuss/explain the physiological/functional reason(s) for this.