Human Physiology 2015 Quiz #5

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1) (4 pts) Vasoconstriction

|  |
| --- |
| **A) decreases blood flow and increases blood pressure**. |
| B) increases blood flow and decreases blood pressure. |
| C) decreases both blood flow and blood pressure. |
| D) increases both blood flow and blood pressure. |

2) (2 pts) Total peripheral resistance in the circulatory system is primarily determined by the degree of vasoconstriction in the arterioles.

**A) True**

B) False

3) (2 pts) Increased parasympathetic stimulation decreases heart rate.

|  |
| --- |
| **A) True** |
| B) False |

4) (4 pts) Arteries are more/**less**(circle best answer) compliant than veins. This enables the arteries to act as a **pressure**/volume(circle best answer) reservoir and the veins to act as a pressure/**volume**(circle best answer) reservoir.

1) (4 pts) The Frank-Starling mechanism of the heart

A. causes the left ventricle ejects a larger volume of blood with each systole than the right ventricle.

B. decreases the heart's pacemaker rate to 60 beats/min.

C. increases cardiac output by increasing heart rate.

**D. increases cardiac output by increasing contractility in response to increased preload.**

E. causes both ventricles to contract simultaneously.

6) (4 pts). Mean arterial pressure increases from 50 mmHg to 100 mmHg. However, blood flow to the liver needs to remain constant at 25 ml/min. Calculate the new peripheral resistance value, due to the autoregulation response of the muscular arterioles, leading to the liver that would be needed to maintain a constant blood flow rate to the liver. The previous peripheral resistance value was 2 ml/min.mmMg.

**Blood flow = blood pressure / peripheral resistance**

**TPR = BP/BF X = 100/25 =4 ml/min.mmHg**

Bonus: (4 pts) Name one of the winners of this year’s Nobel prize for physiology and medicine? For what did he/she win it?

**William C. Campbell and Satoshi Ōmura: for their discoveries concerning a novel therapy against infections caused by roundworm parasites. Youyou Tu: for her discoveries concerning a novel therapy against Malaria.**