

Guyton:

1* A healthy 27-year-old female medical student runs a 5K race. Which set of physiological changes is most likely to occur in this woman's skeletal muscles during the race?

	Arteriole Diameter	Vascular Conductance	Tissue Oxygen Concentration
A)	↑	↑	↑
B)	↑	↑	↓
C)	↑	↓	↓
D)	↑	↓	↑
E)	↓	↓	↓
F)	↓	↓	↑
G)	↓	↑	↑
H)	↓	↑	↓

Ans: B

2* Cognitive stimuli such as reading, problem solving, and talking all result in significant increases in cerebral blood flow. Which set of changes in cerebral tissue concentrations is the most likely explanation for the increase in cerebral blood flow?

	Carbon Dioxide	pH	Adenosine
A)	↑	↑	↑
B)	↑	↓	↑
C)	↑	↓	↓
D)	↑	↑	↓
E)	↓	↓	↓
F)	↓	↑	↓
G)	↓	↑	↑
H)	↓	↓	↑

Ans: B

3* An increase in shear stress in a blood vessel results in which change?

- A) Decreased endothelin production
- B) Decreased cyclic guanosine monophosphate production
- C) Increased nitric oxide release
- D) Increased renin production
- E) Decreased prostacyclin production

Ans: C

4* A healthy 22-year-old female medical student has an exercise stress test at a local health club. An increase in which of the following is most likely to occur in this woman's skeletal muscles during exercise?

- A) Vascular conductance
- B) Blood flow
- C) Carbon dioxide concentration
- D) Arteriolar diameter
- E) All the above

Ans: E

5* Autoregulation of tissue blood flow in response to an increase in arterial pressure occurs as a result of which of the following?

- A) Decrease in vascular resistance
- B) Initial decrease in vascular wall tension
- C) Excess delivery of nutrients such as oxygen to the tissues
- D) Decrease in tissue metabolism

Ans: C

6* A decrease in the production of which of the following would most likely result in chronic hypertension?

- A) Aldosterone
- B) Thromboxane
- C) Angiotensin II
- D) Nitric oxide

Ans: D

7* A 72-year-old man had surgery to remove an abdominal tumor. Pathohistological studies revealed that the tumor mass contained a large number of vessels. he most likely stimulus for the growth of vessels in a solid tumor is an increase in which of the following?

- A) Growth hormone
- B) Plasma glucose concentration
- C) Angiostatin growth factor
- D) Vascular endothelial growth factor
- E) Tissue oxygen concentration

Ans: D

8* While participating in a cardiovascular physiology laboratory, a medical student isolates an animal's carotid artery proximal to the carotid bifurcation and partially constricts the artery with a tie around the vessel. Which set of changes would be expected to occur in response to constriction of the carotid artery?

	Heart Rate	Sympathetic Nerve Activity	Total Peripheral Resistance
A)	↑	↑	↑
B)	↑	↑	↓
C)	↑	↓	↓
D)	↑	↓	↑
E)	↓	↓	↓
F)	↓	↓	↑
G)	↓	↑	↑
H)	↓	↑	↓

Ans: A

9* While participating in a cardiovascular physiology laboratory, a medical student isolates the carotid artery of an animal and partially constricts the artery with a tie around the vessel. Which set of changes would be expected to occur in response to constriction of the carotid artery?

	Sympathetic Nerve Activity	Renal Blood Flow	Total Peripheral Resistance
A)	↑	↑	↑
B)	↑	↓	↑
C)	↑	↓	↓
D)	↑	↑	↓
E)	↓	↓	↓
F)	↓	↑	↓
G)	↓	↑	↑
H)	↓	↓	↑

Ans: B

10* A 22-year-old man enters the hospital emergency department after severing a major artery in a motorcycle accident. It is estimated that he has lost approximately 700 milliliters of blood. His blood pressure is 90/55 mm Hg. Which set of changes would be expected in response to hemorrhage in this man?

	Heart Rate	Sympathetic Nerve Activity	Total Peripheral Resistance
A)	↑	↑	↑
B)	↑	↓	↑
C)	↑	↓	↓
D)	↑	↑	↓
E)	↓	↓	↓
F)	↓	↑	↓
G)	↓	↑	↑
H)	↓	↓	↑

Ans: A

11* 2. Which condition normally causes arteriolar vasodilation during exercise?

- A) Decreased plasma potassium ion concentration
- B) Increased histamine release
- C) Decreased plasma nitric oxide concentration
- D) Increased plasma adenosine concentration
- E) Decreased plasma osmolality

Ans: D

12* Release of which substance causes vasodilation and increased capillary permeability during anaphylactic shock?

- A) Histamine
- B) Bradykinin
- C) Nitric oxide
- D) Atrial natriuretic factor
- E) Adenosine

Ans: A

* Anaphylactic shock “ allergic reaction “

020:

13* Which of the following is a vasoconstrictor?

Ans : endothelin

14* A patient has an AV fistula from the radial artery to the antecubital vein to permit vascular access for dialysis, what occurs to the venous side?

- A) Outward remodeling
- B) Outward hypertrophic remodeling
- C) Hypertrophic remodeling
- D) Inward eutrophic remodeling

Ans: B

15*Which of the following is true regarding local control of tissue blood flow?

- A) Reactive hyperemia is when a tissue becomes highly active, such as an exercising muscle so the rate of blood flow through the tissue increases
- B) Active hyperemia is When the blood supply to a tissue is blocked for a few seconds to hours then is unblocked, blood flow through the tissue usually increases immediately
- C) Angiogenesis is stimulated by increased metabolic requirements and tissue hypoxia

Ans: C