Name: _____ **Date:** _____

Why Does Your Pulse Race? 7th Grade Exercise Physiology Quiz

How does your body adapt to a 400-meter dash? Analyze the mechanics of homeostasis, lactic acid, and cardiac output during physical stress.

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1. During a vigorous soccer match, your body maintains homeostasis by increasing your breathing rate. What primary chemical change in the blood triggers this response?

A. A decrease in nitrogen levels
B. An increase in carbon dioxide concentration
C. A sudden drop in body temperature
D. Increased production of red blood cells

2. When an athlete transitions from a slow jog to a 50-meter max-effort sprint, they shift from using oxygen for energy to the _____ system for immediate power.

A. Aerobic
B. Anaerobic
C. Circulatory
D. Endocrine

3. Hypertrophy, or the increase in muscle fiber size, is considered an acute response rather than a chronic adaptation.

A. True
B. False

4. Vasodilation occurs during exercise when blood vessels near the skin expand. What is the physiological purpose of this change?

A. To slow down the heart rate
B. To store more glucose in the liver
C. To radiate excess heat away from the body
D. To decrease the amount of oxygen in the blood

5. Stroke volume refers to the amount of blood pumped by the _____ with each individual contraction.

A. Lungs
B. Left Ventricle
C. Arteries
D. Capillaries

6. A marathon runner often hits 'the wall' when their body runs out of stored glycogen. Which fuel source does the body primarily switch to at this point?

A. Lactic acid
B. Bone marrow

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C. Fatty acids
D. Carbon dioxide

7. Delayed Onset Muscle Soreness (DOMS) is primarily caused by an accumulation of lactic acid that stays in the muscles for several days.

A. True
B. False

8. The measurement of the maximum amount of oxygen an individual can utilize during intense exercise is known as _____.

A. Cardiac Output
B. VO2 Max
C. Vital Capacity
D. Tidal Volume

9. Which of these is a long-term skeletal adaptation to weight-bearing exercises like dancing or hiking?

A. Increased bone density
B. Shortening of the femur
C. Decreased joint flexibility
D. Reduction in red blood cell production

10. A lower resting heart rate in a trained athlete is a sign that their heart has become more efficient at pumping blood.

A. True
B. False