Name: _____ **Date:** _____

When Your Metabolism Goes Rogue: 11th Grade Fitness Bioenergetics Quiz

Calculate metabolic thresholds and evaluate periodization models to optimize individual physiological adaptations and peak performance outcomes.

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1. A cyclist performing a 40km time trial begins to experience a sharp rise in blood lactate that exceeds their clearance rate. Which physiological milestone have they most likely surpassed?

A. VO2 Max
B. Onset of Blood Lactate Accumulation (OBLA)
C. Steady State Cardio
D. Excess Post-Exercise Oxygen Consumption (EPOC)

2. An athlete utilizing 'Non-Linear Periodization' maintains the exact same volume and intensity for 4-6 weeks to ensure cellular adaptation before changing stimulus.

A. True
B. False

3. In advanced resistance training, the principle of ____ suggests that as an individual nears their genetic ceiling, the rate of adaptation slows significantly despite increased effort.

A. Reversibility
B. Overload
C. Diminishing Returns
D. Specificity

4. If a rock climber is performing a 15-second explosive 'dyno' move, which energy system is primarily responsible for the immediate resynthesis of ATP?

A. Oxidative Phosphorylation
B. Glycolytic System
C. Phosphagen System (ATP-PC)
D. Beta-Oxidation

5. The 'Henneman Size Principle' explains that motor units are recruited in order from ____ throughout a muscle contraction.

A. Fast-twitch to Slow-twitch
B. Smallest to Largest
C. Largest to Smallest
D. Peripheral to Central

6. Plyometric training utilizes the Stretch-Shortening Cycle (SSC) to increase power output by leveraging the elastic energy stored during the eccentric phase.

A. True

B. False

7. When designing a macrocycle for a triathlete, which phase involves the highest volume of aerobic work with the lowest sport-specific intensity?

A. Competition Phase
B. Tapering Phase
C. Transitional Phase
D. General Preparatory Phase

8. In the context of flexibility, ____ inhibition occurs when a muscle is stretched and the Golgi Tendon Organ (GTO) causes the muscle to relax to prevent injury.

A. Reciprocal
B. Autogenic
C. Concentric
D. Antagonistic

9. Hypertrophy is defined as the increase in the total number of muscle fibers (muscular hyperplasia) rather than the increase in the size of existing fibers.

A. True
B. False

10. A marathoner hits 'the wall' at mile 20. Biochemically, this is most likely due to the depletion of which primary fuel source?

A. Liver and Muscle Glycogen
B. Adipose Tissue Triglycerides
C. Intramuscular Phosphocreatine
D. Amino Acid Pools