

Name: _____

Date: _____

Warm-Up: Skeletal Muscle Activity B (pp 188-195)

Multiple Choice: *Identify the choice that best completes the statement or answers the question.*

- _____ 1. Isometric contractions produce: (p 195)
- Ⓐ contractions
 - Ⓑ movement
 - Ⓒ muscle shortening
 - Ⓓ contractions and movement, but not shortening
 - Ⓔ contractions and shortening, but not movement
- _____ 2. Anaerobic glycolysis occurs without: (p 194)
- Ⓐ ATP
 - Ⓑ oxygen
 - Ⓒ lactic acid
 - Ⓓ carbon dioxide
 - Ⓔ glucose
- _____ 3. Which of these pathways is the fastest way to regenerate ATP during muscle activity: (p 194)
- Ⓐ direct phosphorylation of ADP by creatine phosphate
 - Ⓑ aerobic respiration
 - Ⓒ anaerobic glycolysis and lactic acid formation
 - Ⓓ oxidative phosphorylation
 - Ⓔ both aerobic respiration and anaerobic glycolysis

True/False: *Indicate whether the statement is true or false.*

- _____ 4. The neurotransmitter used by the nervous system to activate skeletal muscle cells is acetylcholine. (p 188)
- _____ 5. The effect of the neurotransmitter on the muscle cell membrane is to temporarily modify its permeability of ions such as Na⁺ and K⁺. (p 190)
- _____ 6. When a muscle fiber contracts, the I bands diminish in size, the H zones disappear, and the A bands move closer together but do not diminish in length. (p 191)
- _____ 7. A muscle twitch results when the muscle is stimulated so rapidly that no evidence of relaxation is seen. (p 192)
- _____ 8. Aerobic respiration requires the use of oxygen to generate ATP. (p 193)
- _____ 9. Oxygen debt promotes lactic acid accumulation on muscles from anaerobic cellular respiration. (p 194)
- _____ 10. A sustained partial contraction of skeletal muscle is called muscle tone. (p 195)

Name: _____

Matching

Match the following:

- | | |
|------------------------|-------------------------|
| Ⓐ enzymes | Ⓕ anaerobic respiration |
| Ⓑ calcium ions | Ⓖ potassium ions |
| Ⓒ creatine phosphate | Ⓖ aerobic respiration |
| Ⓓ acetylcholinesterase | Ⓘ sodium ions |
| Ⓔ acetylcholine | |

- ___ 11. Chemical that serves as the actual "go" signal for muscle contraction. (*p 187*)
- ___ 12. Neurotransmitter substance released at motor end plates by the motor neuron. (*p 188*)
- ___ 13. Chemical stored in the sarcoplasmic reticulum (*(p 187/p 191)*)
- ___ 14. A metabolic pathway that produces water, carbon dioxide, and ATP, and provides for a large amount of ATP per glucose because oxygen is used. (*p 193*)
- ___ 15. A reserve, high-energy compound used to convert ADP to ATP by the transfer of a high-energy phosphate group. (*p 193*)
- ___ 16. Enzyme that breaks down acetylcholine (ACh). (*p 189/p 190*)