

CHAPTER 10**ANSWER KEY****ATP from Aerobic Cellular Respiration and Fermentation Answer Key****BLM 10.1.10A**

1. Red muscle contains myoglobin, a red pigment molecule with a higher affinity for oxygen than hemoglobin has. As blood flows through capillaries in muscle tissue, oxygen diffuses into the tissue and binds with myoglobin. This large supply of stored oxygen supports increased aerobic cellular respiration during exercise.
2. Shivering results from spontaneous muscle contractions that cause ATP to break down, releasing heat and increasing body temperature.
3. Wasted heat from exercise is dissipated when blood vessels in the skin undergo vasodilation. Evaporation of sweat also dissipates heat.
4. Production of ATP from fermentation is similar to borrowing money. ATP is produced without oxygen in the same way as borrowing provides money without earning it. Eventually, lactate produced in fermentation is eliminated as oxygen becomes available in the same way a monetary debt is repaid through work.