Lecture 15: Active Learning Questions

1. What is a T-tubule and what is its function? What structure abuts the T-tubule deep within a skeletal muscle myocyte? Where is calcium stored in myocytes?

2. Identify 2 regulatory proteins within a skeletal muscle fiber. What do they do, that is, what is the function of each? What is calcium’s role in skeletal muscle contraction?

3. At the myocyte or cellular level, what 2 steps are required for muscle relaxation to take place? Ultimately, what energy source is required for both of these steps?

4. What is muscle hypertrophy? What happens to myofibrils when a muscle hypertrophies due to strength training? What does strength training impact mitochondria? How does endurance training impact the immediate energy system?

5. What is muscle atrophy? What happens to the myofibrils when a muscle atrophies due to space flight (an anti-gravity environment) or being bedridden or immobile for extended periods?