

1. What effect does increasing the frequency of action potential in a skeletal-muscle fiber have upon the force of contraction? Explain the mechanism responsible for this effect. (15%)
2. Describe in detail the sequence of events that leads to hyperpolarization of the photoreceptor cell membrane when light shines on the rod cell. (20%)
3. Draw a flow diagram summarizing the factors affecting arteriolar radius. (15%)
4. What are the two major controls of aldosterone secretion, and what are this hormone's major actions? (15%)
5. How does renal hydrogen-ion secretion occur, and how does it achieve renal bicarbonate reabsorption? (15%)
6. List five inputs controlling insulin secretion, and state the physiological significance of each. (20%)