

1. Please explain the sliding filament theory of contraction using appropriately labeled diagrams of a relaxed and a contracted sarcomere. (10%)
2. Please describe the functions of skeletal system. Also, tell me why this system is so important to our body? (10%)
3. Please describe the events how the action potential is generated in neuron. Also, let me know why it is so important to our body? (10%)
4. Please define the stages of coagulation in bleeding. (10%)
5. Please define the functions of integumentary system. (10%)
6. Hypertension and cardiac failure are often linked to each other, for example, hypertension may facilitate heart failure and vice versa. Based on factors which determine blood pressure and cardiac output, please discuss the mechanisms for one disorder to promote the other. (20%)
7. The kidneys play the key role in maintaining fluid volume and the homeostasis of mineral composition in the body. Could you explain how this is accomplished and how it is regulated? (20%)
8. Smoking has been shown to be a major risk factor for respiratory disorders. Please explain how smoking impedes respiratory functions. (10%)