

1. Please describe the mechanism for regulating erythropoiesis. (10%)
2. The refractory period of cardiac muscle is much longer than that of skeletal muscle. Please tell me how this will benefit our body. (5%)
3. A young boy jumps into cold water pond from hot water pond in his first experience of spa, and stays in cold water for an hour. He notices that his scrotum is shrunk and wrinkled. Please tell me how this happens and how this will benefit him. (10%)
4. Please describe the active and passive tubular reabsorption in kidney. Please tell me how this will benefit our body. (10%)
5. What organ(s) might go wrong if you always have fatty stools? Please explain. (10%)
6. Please briefly explain the high altitude (mountain) sickness. How can you ease the symptom? (5%)
7. Please discuss the similarities and differences in signal transduction pathways between lipid-soluble and insoluble messengers. (10%)
8. Please explain how the intracellular and extracellular concentrations of Na^+ , K^+ and Cl^- determine membrane potential of a neuron at rest. (10%)
9. Please explain how blood flow is regulated in the vascular system and give an example each for vasoconstrictor and vasodilator. (10%)
10. Please describe the sequential events of excitation-contraction coupling in the cardiac muscle. (10%)
11. Please describe mechanisms regulating lung compliance and airway resistance. (10%)