

**Answer a total of 5 out of the following 6 questions (each 20%):**

1. "Muscle is a machine for converting chemical into mechanical energy". Based on your knowledge in Muscle Physiology, please explain why the statement is deduced.
2. The nerve gases that were developed for chemical warfare generally inhibit acetylcholinesterase. Why does inhibition of acetylcholinesterase produce death?
3. A person is given a drug that doubles the blood flow to his penis but does not change the mean arterial pressure. What must the drug be doing to maintain the mean arterial pressure?
4. A woman who has climbed to the top of Yu-Sun (an altitude of about 10,000 feet) experiences some degree of mountain sickness, including breathless. After couple days, the symptoms of mountain sickness disappear. Please explain why the symptoms of mountain sickness occur and then disappear.
5. If you were a scientist trying to develop a male contraceptive acting on the anterior pituitary, would you try to block the secretion of FSH or that of LH? Explain the reason for your choice.
6. A poor girl has suffered from diarrhea for couple days. In this case, how does her renal function balance the fluid loss?