

1. Explain how to control the sleep-wake cycle and discuss why do we sleep?
(20 %)
2. What are the effects of saturated and unsaturated fatty acid on plasma cholesterol? Why is a reduced cholesterol intake important? What is the significance of the ratio of low-density lipoproteins (LDL) to high-density lipoproteins (HDL)? (20 %)
3. A person is doing severe exercise, what happens to his arterial P_{O_2} , P_{CO_2} , and H^+ concentration? Describe the pathways by which changed these factors stimulate ventilation during exercise? (20 %)
4. Discuss the rationale that do not take too much salt for hypertensive patients. What is the mechanism of sodium reabsorption in kidney, and how is the reabsorption of other solutes coupled to it? (20 %)
5. List the hormonal changes and their sources during different stages of pregnancy and discuss the significance of each hormone during pregnancy.
(20 %)