

※ 考生請注意：本試題不可使用計算機。請於答案卷(卡)作答，於本試題紙上作答者，不予計分。

1. Please describe the mechanism and function of homeostasis and the definition of internal environment. (15%)
2. Compare the mechanisms by which a rise in cytosolic calcium concentration initiates contractile activity in skeletal and smooth muscle cells. (15%).
3. Describe the changes of ion flux in a single action potential of contractile cardiac muscle. (15%)
4. Physical exercise causes changes in cardiovascular system. Please describe the physiological changes and the involvement nervous system in regulation of cardiac functions. (15%)
5. During exercise, there is an increase of blood pressure, but renal blood flow remains quite stable, which is called renal auto-regulation. Please describe the mechanism of renal auto-regulation. (15%)
6. Please describe the menstrual cycle and the hormonal changes during the cycle. (15%)
7. List any one of Nobel Laureates and describe whose findings that received Nobel Prize of Physiology/Medicine in the past 20 years. (10%)