

系所組別： 藥理學研究所

考試科目： 生理學

考試日期：0308，節次：3

※ 考生請注意：本試題 可 不可 使用計算機**Part I : 50%**

1. Please describe the intracellular signals generated by the binding of a hormone to its receptor (10%).
2. Explain the action of neurotransmitters in transmitting a nerve impulse from one cell to another (10%)
3. Please describe the structure of muscle tissues in terms of their molecular components and their organization at the cellular level (10%)
4. Name three substances which interfere with cation fluxes in excitable cells, and explain their mechanism of action. (10%)
5. Please briefly describe the mechanisms of fertilization in mammalian cells. (10%)

Part II : 50%

1. Why do astronauts suffer bone loss after long term space travel? Discuss the possible physiological mechanism(s) involved. (10%)
2. Discuss the similarities and differences among visceral, inflammatory and neuropathic pains. (10%)
3. Discuss the hormonal regulations of the vascular system. (10%)
4. How does the body maintain H^+ balance among the bodily fluids? (10%)
5. Discuss the role of serotonin in brain functions. (10%)