

※ 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. John O'Keefe, May-Britt Moser and Edvard I. Moser received the 2014 Nobel Prize in Physiology or Medicine. Please describe the importance of their findings. (10%)
2. Please describe the organization of nervous system in human body. (15%)
3. Please describe the cardiac excitation cycle and the PQRST waves. (15%)
4. Which four pressures determine the net flow of fluid between capillary and interstitial space? (10%)
5. What is the effect of changing afferent and efferent arteriole resistance on glomerular filtration rate? (10%)
6. What are mechanisms that allow parathyroid hormone to reverse a reduction in plasma Ca^{2+} concentration toward normal? (15%)
7. Please describe how ion movement generates the action potential. (10%)
8. Please answer below questions about stem cells. (15%)
 - (1) What are the characteristics of stem cell? (5%)
 - (2) Please briefly describe the following terms of stem cells: (10%)
 - a. Totipotent stem cells
 - b. Pluripotent stem cells
 - c. Unipotent stem cells
 - d. Induced pluripotent stem cells (iPS)