

系所組別： 臨床醫學研究所

考試科目： 基礎醫學

考試日期： 0308，節次： 3

※ 考生請注意：本試題 可 不可 使用計算機

1. “Translational Medicine”, or “Translational Research”, is growing in importance in the healthcare and biomedical research. Please describe what you know about Translational Medicine? (10%)
2. Gene A is located in human chromosome 3 and is required for embryonic development. Human genetic studies identified that Gene A is *associated* with human hypertension. Describe what method might be used to define the previous *association* study in humans? (5%) Design a series of experiments to address the *causative role* of Gene A in the pathogenesis of hypertension (10%).
3. 2008 Nobel Prize in Physiology or Medicine was awarded jointly to Harald zur Hausen, Barré-Sinoussi, and Luc Montagnier. Describe briefly their important discoveries? (10%) What are its significance and impact on biomedical research? (5%)
4. What is “Nuclear receptor”? (5%) What are the protein domain characteristics for the nuclear receptor? (5%) What is the action mechanism for nuclear receptor? (5%)
5. Single nucleotide polymorphism (SNP) of humans can affect how humans develop diseases and respond to pathogens, chemicals, drugs, vaccines, and other agents. What is SNP? (5%) Explain how SNP accounts for the different responses to diseases and drugs. (5%) How can we detect SNP? (5%)
6. All cells/tissues are exposed to harsh conditions. Even normal developmental or nutritional changes exert stresses as systems try to re-establish homeostasis. Describe the following stress and discuss what actions cells/tissues may respond to protect against this stress.
 - (1) Hypoxia (6%)
 - (2) ER stress (6%)
 - (3) Autophagy (6%)
 - (4) Oxidative stress (6%)
 - (5) Inflammation (6%)