

系所組別：環境醫學研究所乙組

考試科目：環境毒理學

考試日期：0308，節次：2

※ 考生請注意：本試題 可 不可 使用計算機

1. Science can be considered as organized precise knowledge or as the process by which such knowledge is obtained. Hypothesis is the most important mental technique of an investigator, and its main function is to suggest new experiments or new observations. Indeed, most experiments and many observations are carried out with the deliberate object of testing a hypothesis. Toxicology attempts to define the harm that chemicals can cause to human beings and it is an integral part of the risk assessment process. Please show an approach to the study of mechanisms of chemical toxicity. (10%)
2. Describe the following: (12%)
  - (A) Two examples to explain why the target tissue is not necessarily the tissue in which the toxicant is most highly concentrated.
  - (B) Interactions between two toxicants: synergism, antagonism, and potentiation.
  - (C) Effect of enterohepatic circulation on the detoxification process of xenobiotics.
3. Draw a diagram showing the major sites of xenobiotic absorption, metabolism, and excretion, in a human body. (8%)
4. The 2008 Chinese milk scandal is a food safety incident in mainland People's Republic of China involving milk and infant formula which had been adulterated with melamine. With China's wide range of export food products, the scandal has affected countries on all continents. Please describe what you know about the toxicity of melamine and what actions that you would suggest our government take to protect human health. (10%)
5. Describe as much as possible how a normal cell becoming transformed cancerous cell when exposed to chemical carcinogen. (8%)
6. What are the objectives of subchronic toxicology studies? What benefits the in vitro toxicity testing system can provide? (7%)
7. Explain the following terms and their toxicological significance: (15%)
  - a. Genotoxicity.
  - b. Acceptable Daily Intake (ADI).
  - c. Big blue mice.
  - d. Ames test.
  - e. Phase II reaction.
8. What is chemokine? Please give one example to illustrate its function. (9%)
9. Please provide examples to explain the following terms. (12%)
  - a). Immunosuppression
  - b). Neurotransmitter
10. Please describe the roles of neutrophil activation during acute inflammation or infection. (9%)