

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：0223，節次：2

※ 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. Discuss the advantages and disadvantages of the two major models for estimating the risk of toxicant exposure at low doses below NOAEL. Which one is often used for carcinogenic toxicants? Why? (6%)
2. Give the definitions and examples for the following interactions between two toxicants: synergism, antagonism, and potentiation. (9%)
3. Describe how pH values affect the partitioning of salicylic acid across the gastric mucosa and influence the salicylic acid's absorption in gastrointestinal tract. (5%)
4. Describe cytochrome P450 oxidation cycle and its function in detoxification process. (5%)
5. Please describe in detail the development of adaptive immune response. (15%)
6. Please name one environmental toxicant and outline its toxicity from the mechanistic point of view. (10%)
7. Define dose-response relationship. (5%)
8. Define poisons (5%) and describe several functions for poisons. (7%)
9. Show the toxicity of toxic heavy metal nickel. (8%)
10. What are the objectives of subchronic toxicology studies? What benefits the *in vitro* toxicity testing system can provide? (10%)
11. Explain the following terms and their toxicological significance: (15%)
 - a. Genotoxicity
 - b. Acceptable Daily Intake (ADI)
 - c. Metabolic activation.
 - d. DNA-adduct
 - e. Phase II reaction