

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：0220，節次：2

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1. What do you think the key challenges for toxicologists in the 21st century? (8 pt)
2. Define poisons and describe their functions for poisons. (8 pt)
3. According to a BBC news posted on January 7, 2011, more than 4,700 German farms have been closed after large amounts of animal feed were found to be contaminated with dioxin, a poisonous chemical. Answer the following questions related to dioxins. (5 pt each)
 - (A) What are the health effects when humans are exposed to dioxins?
 - (B) Describe the characteristics of dioxin ADME in a human body.
 - (C) Use a diagram to explain the known molecular mechanism describing how dioxins would interact with living cells via aryl hydrocarbon receptors.
 - (D) Draw the chemical structures of dioxins. Which dioxins are considered more toxic to humans?
 - (E) Design an experiment to find out the NOAELs for dioxins using experimental animals. Try to describe as many as experimental parameters to justify your experimental design.
4. Describe the following: synergism, antagonism, and potentiation. (9 pt)

(背面仍有題目,請繼續作答)

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5. Define the following terms: (3 pt each)
 - (A). Acceptable Daily Intake (ADI)
 - (B). Genotoxicity
 - (C). LD50
 - (D). MTD
 - (E). DNA-adduct
6. Give two examples happened recently in our society related to toxicants and their impacts. (10 pt)
7. Please elaborate on the role of dendritic cells in immunotoxicological response. (10 pt)
8. Please explain the following terms:
 - (A). CD4+ T cells (5 pt)
 - (B). TNF- α (5 pt)
 - (C). Reactive oxygen species (5 pt)