

國立成功大學

114學年度碩士班招生考試試題

編號：205

系所：環境醫學研究所

科目：毒理學

日期：0211

節次：第 2 節

注意：1. 不可使用計算機
2. 請於答案卷(卡)作答，於
試題上作答，不予計分。

號： 205

Draw a diagram showing the major sites of xenobiotic absorption, metabolism, and excretion, in a human body. (10%)

Define the following terms, "ADI", "TDI", and "MRL". Draw a diagram to describe how the ADI, TDI, and MRL can be determined. Use the diagram to explain why an MRL value for ractopamine is set to be 0.01ppb and why this value is considered safe for consumers. (15%)

Tabulate the types of phase I and II reactions, as well as their responsible enzymes/cofactors and their cellular locations, in the biotransformation of the xenobiotics. Also discuss why (1) they result in better efficiency in urinary excretion of xenobiotics; (2) the biotransformation is considered as a balance between bioactivation and detoxification. (25%)

4. 動物實驗及體外 (in vitro) 毒性測試各有何優缺點？(10%)
5. 奈米物質的定義及其和一般化學物質的主要差異為何？(10%)
6. 毒理學的知識可以應用在日常生活的那些領域？請舉例說明。(10%)
7. 斑馬魚，果蠅和線蟲是重要毒理學毒性測試的模式生物，請舉其中一種模式生物說明其優缺點。(10%)
8. 化學致癌過程可概分為 initiation, promotion 及 progression 試說明基因毒性致癌物質誘發腫瘤產生的此三步驟特徵。(10%)