

國立成功大學

113學年度碩士班招生考試試題

編 號：269

系 所：環境醫學研究所

科 目：環境衛生

日 期：0202

節 次：第 2 節

備 註：不可使用計算機

※ 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. Please define the primary standards and secondary standards of water quality? (6%), then which following item belong to primary standards or secondary standards? (8%)

(a) Coliform group (b) Turbidity (c) Cadmium

(d) Vinyl chloride (e) Trihalomethane (f) Silver

(g) Copper (h) Chloride

2. Please describe the definition of “Endocrine Disruptor”, “Persistent Organic pollutants” (8%), and then give an endocrine disrupting chemical as example to explain briefly the meaning of “Endocrine Disruptor Hypothesis” proposed by Theo Colborn (8%).

3. Please explain why the “Coliform group” is the good biological indicator for drinking water? (10%)

4. Please describe the four steps of health risk assessment of toxic chemicals (10%).

5. At 1 atm 25°C, the equation for conversion between ppm and mg/m³ is:

$$X(\text{ppm}) = \frac{Y(\text{mg}/\text{m}^3) \times 24.45}{\text{molecular weight}}$$

a. How was 24.45 obtained? (7%)

b. What would 24.45 change to if X unit is ppt instead of ppm? (8%)

6. Please summarize the following paragraph written by Hiroko Tabuchi and Brad Plumer in 2021. (15%)

“One way to compare the climate impacts of different vehicle models is with this interactive online tool by researchers at the Massachusetts Institute of Technology, who tried to incorporate all the relevant factors: the emissions involved in manufacturing the cars and in producing gasoline and diesel fuel, how much gasoline conventional cars burn, and where the electricity to charge electric vehicles comes from.

Suppose you assume electric vehicles are drawing their power from the average grid in the United States, which typically includes a mix of fossil fuel and renewable power plants. In that case, they’re almost always much greener than conventional cars. Even though electric vehicles are more emissions-intensive to make because of their batteries, their electric motors are more efficient than traditional internal combustion engines that burn fossil fuels.”

7. 請說明飲用水中的「有機污染物」及「無機污染物」的來源為何? (6%) 水俣病與烏腳病分別是哪种污染物所引起? (4%)

8. 請舉出「事業廢棄物」之兩種事業種類? (4%) 如何處理事業廢棄物? (6%)