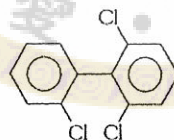


1. 酸雨判斷的準則是不是 pH 值 < 7? 若不是, 理由何在? (10%)
2. 天然的河川剛受到都市汙水的排入, 水中溶氧沒有顯著降低, 水流一段時間後, 河川溶氧濃度才顯著下降, 理由何在? (10%)
3. 電導度 (Electrical Conductivity, EC) 是測定水質的常見項目, 論電導度測定的意義何在。 (10%)
4. 重金屬鉛(Pb)汙染農地時, 大都累聚在表土 0-10 公分, 很少傳輸到深處, 理由何在? (10%)
5. The COD of a water sample is found to be 32 mg of O₂ per liter. What volume of 0.0040 M K₂Cr₂O₇ will be required to titrate a 100-mL sample of the water? (8%)
6. Calculate the total alkalinity for a sample of river water whose phenolphthalein alkalinity is 6.0 x 10⁻⁵ M, whose pH is 10.0, and whose bicarbonate ion concentration is 2.0 x 10⁻⁴ M. (9%)
7. Greenhouse effect is a globally environmental concern. Taking CO₂ as an example, based on the characteristic of wavelength of sun and molecule vibration in troposphere, explain mechanisms involved in Greenhouse effect. (10%)
8. For PCB shown below, deduce which furans would be expected to be produced by Cl₂ or HCl elimination when the PCB is heated in air. (12%)



9. What different instrumental methods of analysis are useful in general for analysis of each of the following:
(1) metals; (2) volatile organic compounds; (3) nonvolatile organic compounds. (9%)
10. Deduce the series of steps by which the formaldehyde molecule (H₂CO) will be oxidized to carbon dioxide (CO₂) (12%)

試題隨卷繳回