

科目：環境工程 適用：土木所環管

考生注意：

1. 依次序作答，只要標明題號，不必抄題。
2. 答案必須寫在答案卷上，否則不予計分。
3. 限用藍、黑色筆作答；試題須隨卷繳回。

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- 一、空氣污染造成酸雨問題，已是全球性環境問題，一般認為當降下的雨水 pH 小於 5.6 時，可視其為酸雨。請以化學理論，證實正常雨水 pH 為 5.6。(已知正常大氣中 CO_2 的含量為 $10^{-3.5}$ atm)。(12%)
- 二、有一面音源長 9.4 公尺，寬 3.1 公尺，已知距離面音源中心處 8 公尺處的噪音量為 86.7dB，請求距面音源中心處(1) 0.5 公尺；(2) 2 公尺；(3) 5 公尺處位置的噪音量為何？(12%，每小題 4%)
- 三、請繪圖表示並說明(理由)衛生掩埋場掩埋區內有機物及各種氣體濃度，隨掩埋時間變化之情形？(12%)
- 四、請說明營建工地面對的環保問題有哪些？(6%)其解決的方法為何？(6%)
- 五、請繪圖表示(1)溶氧量、(2)有機物、(3)細菌等物質之濃度或數量在河川自淨過程中的變化情形，並說明變化原因？(12%，每小題 4%)
- 六、請先完整翻譯下列文章，接著對其內容提出您的專業見解。(40%)

Foul taste, smell, or color of your household water may prompt you to investigate water treatment equipment. The publicity about water pollution problems may cause you to question the safety of your water supply. Or mineral scale buildup may cause you to invest in early replacement of plumbing fixtures and water-using appliances.

Before you attempt a quick and possibly costly or ineffective remedy, take a first important step: have your water analyzed. A water analysis will help identify bacteria, minerals, or other pollutants that are present. Interpretation of the test results will help you determine whether the water needs to be treated and, if so, the type of treatment needed. The intended use of the water (whether for drinking, laundry, or all household uses) will also help determine the extent of treatment required.

Keep in mind that no single water treatment device treats all problems, and that all devices have limitations. Common water quality problems and suggested corrective procedures are described in the following table.

Do not assume that installation of water treatment equipment similar to that of your neighbors will be the answer to improving your household water quality. Different water supply sources, amounts and types of household uses, and many other variables affect the selection of the proper water treatment system.