

(水與污水工程)

1. 台灣的都市污水一般做二級處理, 請列出處理的程序, 並說明各處理單元的功能。(15%)
2. 有一壓力流之自來水管, 管徑 400mm 長度 1000m, 今從 A 點輸送 $0.125\text{m}^3/\text{sec}$ 之自來水到 B 點, 求其摩擦損失水頭 (5%)。若不計次要損失水頭, A 點之高程為 100m、水壓為 30m, B 點之高程為 95m, 求 B 點之水壓。但已知水流公式 $v = 0.84935CR^{0.63}S^{0.54}$, v =平均流速 m/sec、 $C=100$ 、 R =水力半徑 m、 S =坡度。(5%)
3. 說明活性污泥法處理污水之原理。(10%)

(背面仍有題目, 請繼續作答)

(空氣污染)

4. Explain the glossary (24%)

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|---------------------------|-------------------------------|
| (1). aerodynamic diameter | (4). adsorption isotherm |
| (2). chemical absorption | (5). LA type smog |
| (3). stop distance | (6). dry adiabatic lapse rate |

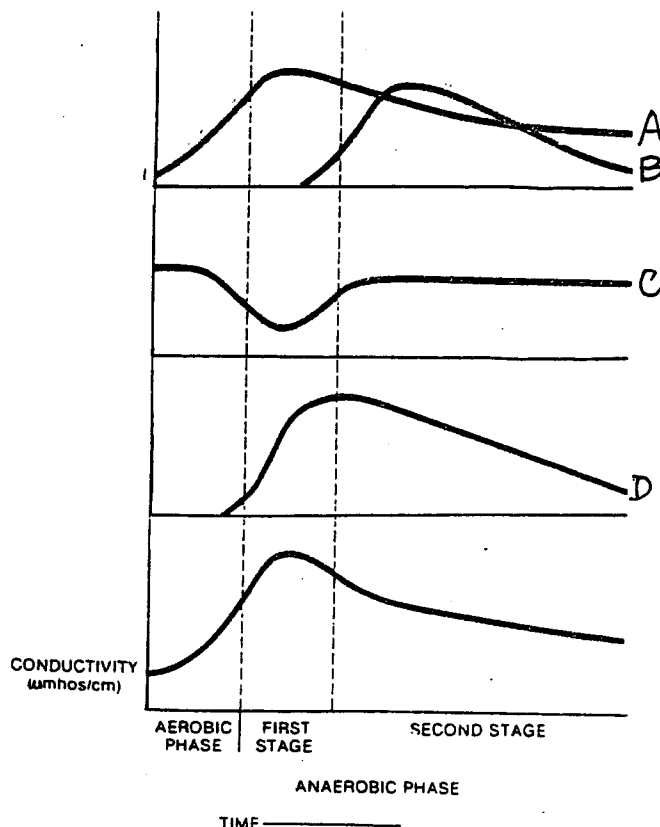
5. Explain the controlling mechanisms of plume rise in the atmosphere. (5%)

6. Natural gas (CH_4) contains 50 ppmv sulfur. Assume the combustion is operated with 20% excess air. Please estimate the concentration of SO_2 (ppmv) in the flue gas with dry base. (6%)

(固體廢棄物)

7. Explain the glossary (18%)

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|----------------|------------------|
| (1). HHV | (4). compost |
| (2). leachate | (5). bottom ash. |
| (3). shredding | (6). RDF |

8. Phase of solid waste decomposition are shown in the figure. Please identify each parameter (pH, CH_4 , CO_2 , COD) for the specific curve (A, B, C, D) and explain the process. (12%)

Phases of solid waste decomposition.