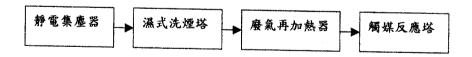
國立中央大學九十一學年度碩士班研究生入學試題卷

所別: 環境工程研究所 乙組列4科目: 環境工程概論 共 2 頁 第 / 頁

- 1. 某工廠有甲、乙、丙、丁四台機器, 個別開啟時其噪音分別為: 75dB(A)、85dB(A) 、88dB(A) 及90dB(A). 請回答以下問題:
 - a. 請問四台機器全開時總噪音為多少分貝?(5%)
 - b. 某勞工於此環境中工作,若依照我國勞工安全衛生法令之要求,此工廠勞工容許暴露時間為幾小時? (5%)
 - c. 每台機器噪音控制成本如下表所示, 請問若要控制總音量在 90 分貝以內, 最少要花多少錢?(5%)

機器	甲	2	丙	T
每分貝控制成本	5,000 元	4,000 元	3,000 元	2,000 元

- 2. 如果你現在被要求就新建火力發電廠與核能電廠進行決策,請問你會考慮哪幾種決策工具來進行決策?(5%)如果你以環境的衝擊影響來進行決策,請問你要考慮哪些環境影響因子?(5%)
- 3. 請問個人呼吸防護器具有哪些種類? 選擇呼吸防護器具時應該要注意哪些事項? (10%)
- 4. 下圖是木栅焚化爐戴奧辛改善工程廢氣處理流程, 請說明其中之 靜電集塵器、濕式洗煙塔、觸媒反應塔等單元其處理原理為何?(5%) 各單元主要去除之污染物有哪些?(5%)木柵廠使用此種流程組合 去除戴奧辛其理由為何?(5%)



注:背面有試題

國立中央大學九十二學年度碩士班考試入學招生試題卷 共之頁 第2頁

- 5) Give a brief definition of the following terms and explain its significance in environmental engineering. (20%)
 - (A) flocculation
 - (B) desalination
 - (C) life-cycle assessment
 - (D) nitrogenous oxygen demand (NBOD)
 - (E) anaerobic digestion
- 6) (A) Decomposition of landfill materials can be thought of as a four-stage (P) Process. List those four stages. (4%)

(B) Draw a figure to illustrate how the composition of landfill gases changes with time and explain the trends. (6%)

- 7) Draw a schematic to show the major components that are commonly applied in a typical wastewater treatment facility that provides primary and secondary of those components. (10%)
- A coal-fired power plant has an efficiency of 36% with 15 percent of the waste heat being released to the atmosphere via stack and the other 85 percent is taken away by MW_e. The river has an upstream flow of 320 m³/s and a temperature of 15°C. The specific heat of water is 4,184 J/kg°C.

(A) How many tons of coal will be consumed per day in this power plant if the energy content of coal is 25 kJ/g. (4%)

(B) If the maximum temperature rise allowed for cooling water is 10°C, calculate the minimum flow rate of cooling water. (3%)

(C) Calculate the river water temperature just after it receives the heated cooling water. (3%)