國立臺北科技大學 101 學年度碩士班招生考試

系所組別:3210環境工程與管理研究所甲組

第一節 環境工程 試題

第一頁 共一頁

注意事項:

- 1. 本試題共7題,配分共100分。
- 2. 請標明大題、子題編號作答,不必抄題。
- 3. 全部答案均須在答案卷之答案欄內作答,否則不予計分。
- 1. What is the theoretical oxygen demand and total organic carbon (TOC) in mg/L for a 500 mg/L solution of CH₃NH₂ to decompose completely? (C=12, H=1, N=14) (15 points)
- 2.A wastewater sludge centrifuge operates with a feed of 40L/min and a feed solids concentration of 1.2 %. The cake solids concentration is 25% solids, and the centrate (dewatered stream) solids concentration is 500 mg/L. What is the recovery of solids? (15 points)
- 3.Please explain the definition of Langelier saturation index (LSI) and its application in Environmental engineering. (15 points)
- 4.Smokers in a room (5m×5 m×2.5 m) are smoking. If the emission rate of a cigarette is 80 mg/hr of CO and if the ventilation is 0.5 change per hour, what is the level of CO in the room? (O=16) (15 points)
- 5.A stack gas contains carbon monoxide (CO) at a concentration of 20 % by volume. What is the concentration of CO in μ g/m³? (assuming 25 °C and 1 atmosphere pressure) (10 points)
- 6.Please describe the strategies for controlling sulfur oxides. (15 points)
- 7.A machine shop has two machines, one producing a sound pressure of 70dB and one producing 57dB. A new machine producing 70dB is brought into the room. What is the new sound pressure in the room? (15 points)

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