國立中央大學113學年度碩士班考試入學試題

所別： 環境工程研究所 碩士班 乙組(一般生)　　

科目： 環境工程概論

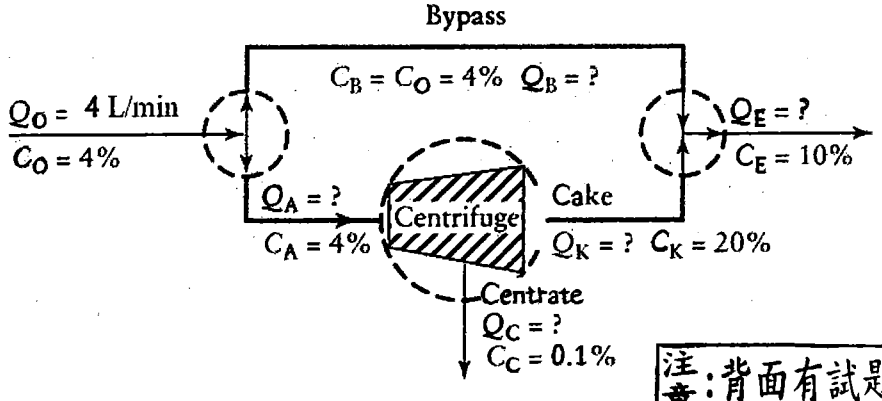
＊本科考試可使用計算器，廠牌、功能不拘

問答題

1. Term explanation. Please write as much as you can to get the entire score (30%)
   (A) Sludge retention time (SRT)
   (B) Disinfection by products (DBPs)
   (C) Dioxins
   (D) Greenhouse effect
   (E) Decibel (dB)
   (F) Solid Recovered Fuel (SRF)

2. Please draw a schematic diagram of a typical drinking water treatment process, and label and explain each unit. (15%)

3. Consider the system pictured in the following figure. A sludge of solids concentration C_0 = 4% is to be thickened to a solids concentration C_E = 10% by using a centrifuge. Unfortunately, the centrifuge produces a sludge at 20% solids from the 4% feed sludge. In other words, it works too well. It has been decided to bypass some of the feed sludge flow and blend it later with the dewatered sludge so as to produce a sludge with exactly 10% solids concentration. The question is, then, what are flow rate of Q_A and Q_B? The influent flow rate (Q_0) is 4 L/min at a solids concentration (C_O) of 4%. It is assumed here, that the specific gravity of the sludge solids is 1.0 g/cm^3. That is, the solids have a density equal to that of water, which is usually a good assumption. The centrifuge produces a centrate (effluent stream of low solids concentration) with a solids concentration (C_c) of 0.1% and a cake (the high solids concentrated effluent stream) with a solids concentration (C_K) of 20%. [Hint: 1% = 10000 mg/L]. (15%)



注意：背面有試題

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4. What are the methods for controlling particulate air pollutants? Please list three methods and describe the details. (20%)

5. (1) According to Taiwan Waste Disposal Act. (廢棄物清理法), what are the classifications of waste? Please provide details as much as you can. (10%)
(2) Please describe one biological and one thermal method that can treat solid wastes. (10%)

注意:背面有試題