

以下為選擇題，每個答案五分，請作答於試卷內之「選擇題作答區」

- Which one is not the greenhouse gases  
(a) CO<sub>2</sub> (b) O<sub>3</sub> (c) CH<sub>4</sub> (d) NO<sub>2</sub>
- What is the correct order of a conventional water treatment process:  
(a) Disinfection→Sedimentation→Coagulation→Flocculation→Filtration  
(b) Sedimentation→Filtration→Disinfection→Coagulation→Flocculation  
(c) Disinfection→Sedimentation→Filtration→Coagulation→Flocculation  
(d) Coagulation→Flocculation→Sedimentation→Filtration→Disinfection
- Which one is not the volatile organic compound (VOC)?  
(a) 1-2 Dichloroethane (b) Bisphenol-A (c) Benzene (d) Trichloroethylene
- What is the cause of the odor (臭味) in the river  
(a) high emerging contaminants concentrations (b) too much ozone  
(c) high organic concentrations (d) too much oxygen (e) has dead animal carcass (動物屍體)
- Which statement below is not true for environmental hormones?  
(a) they are also called endocrine disrupting compounds  
(b) dioxin is an example compound  
(c) they have been proposed to cause decrease in fertility, increases in birth defects and altered sexual expression  
(d) they are persistent in the environment but they do not bioconcentrate/bioaccumulate.
- What is our current CO<sub>2</sub> concentration in the atmosphere?  
(a) 200 ppmv (b) 280ppmv (c) 300ppmv (d) 380ppmv (e) 480ppmv
- Which one is not monitored in Taiwan's air quality standards ?  
(a) total suspended particles (TSP) (b) volatile organic compounds (VOCs) (c) CO (d) O<sub>3</sub>
- LD<sub>50</sub> is used for measuring toxicity of a compound.  
(part I)  
If compound A has LD<sub>50</sub> = 3 mg/L and compound B has LD<sub>50</sub> = 3 ng/L, which compound (A or B) is more toxic?  
(part II)  
What are the problems of this method? (2 correct answers)  
(a) It neglects the long term (chronic) effect  
(b) It neglects the synergistic effect with other toxins  
(c) It is not as accurate as LC<sub>50</sub>  
(d) It can only be tested on the fish.  
(e) It can only be tested on mice.

以下為簡答及計算題，請作答於試卷內之「非選擇題作答區」

- Contaminant X undergoes pseudo-first order degradation in the aqueous environment, having degradation constant of 0.1 per second and initial concentration of 10 mg/L. What is the half life of this contaminant X? (10%)
- Please compare the two methods for managing the solid wastes: incinerator vs. landfill. What are the advantages and disadvantages of each method (10%) .
- Is ozone desirable in troposphere (對流層)? How about in stratosphere (平流層)? Please explain (10%)
- What is biological oxygen demand (BOD) ? (10%)
- (a) When the air is clean (no source of contamination), what is the pH of the rain water? Please explain. (10%)  
(b) What is acid rain? (5%)

試題隨卷繳回