

Homework #5

Released: 11/24/2014 (Mon) - Due: 12/3/2014 (Wed), in class

The homework will NOT be graded, but we will check for MISSING ANSWERS and CHEATING. Note that a cheated homework will get 80% of the lowest score in the class. You can give the answers either in English or Korean.

1. [Air pollution] One day, you analyzed the air at Gwanak campus over an hour. The hourly-averaged concentrations of SO₂, CO, and NO₂ were measured to be 50, 125, and 250 μg/m³, respectively. The Korean air quality standards for hourly-averaged concentrations of SO₂, CO, and NO₂ are 0.15, 25, and 0.10 ppm, respectively. Does any of the three pollutants exceed the Korean air quality standards? The atmospheric pressure and temperature at Gwanak campus during the analysis were 1 atm and 15°C, respectively.
2. [Air pollution] Uncontrolled burning of plant materials such as fallen leaves and rice straws may significantly affect the local air quality. List the major air pollutants that may be generated by uncontrolled burning of natural plant materials.
3. [Air pollution] List processes to remove particulate matter in the air emitted from a point source. Briefly explain the removal mechanism.
4. [Solid waste management] Select one day of the homework preparation period (11/24 to 12/2) to record all the solid wastes you produce. List the wastes you produced and classify them into non-recyclables, recyclables, and food waste. How much solid waste (in grams) are you producing in a day? You do not have to weigh the solid waste, but just make a guess.

5. [Solid waste management] (International students: select either A or B; Korean students: select A)

A. Look up the regulation standards for sanitary landfill in your own country. Describe the guideline for the landfill liner to prevent the landfill leachate to escape from the landfill.

* Guide for Korean students: 인터넷 홈페이지 <http://www.law.go.kr>로 들어가면 모든 국내 법-시행령-시행규칙의 검색이 가능. 폐기물관리법 시행규칙을 검색하여 선택한 후, [별표 9] 확인.

B. Find the most recent value of daily per capita production of solid wastes for your own country. Compare the value with those for others provided in the lecture note. Briefly discuss the reason why your country produces greater/smaller amount of solid wastes compared to other countries.