

Earth Environment and Design  
(NC1008)

Assignment

**(Total marks = 20)**

1. What do you understand by “Life Cycle Thinking”? Explain the term “Circular Economy”.  
[2]
2. The analysis of 1 litre sample of water shows that it contains 5.0 mg of trichloroethylene (TCE). Calculate the TCE concentration in ppm<sub>m</sub> and mg/L.  
[3]
3. A gas mixture contains 0.001 mole of sulfur dioxide (SO<sub>2</sub>) and 0.999 mole of air. What is the SO<sub>2</sub> concentration expressed in units of ppm<sub>v</sub>?  
[3]
4. What is “Normality”? What is the normality of 1 M solution of HCl and H<sub>2</sub>SO<sub>4</sub>?  
[3]
5. The concentration of gas phase PCBs in the air above a lake is measured to be 450 picograms/m<sup>3</sup>. What is the partial pressure of PCBs in atm? Assume the temperature is 0°C, atmospheric pressure is 1 atm and the average molecular weight of PCBs is 325.  
[3]
6. What is “Tragedy of common”? Explain briefly.  
[1]
7. What are molarity and molality?  
[2]
8. The concentration of TCE is 5 ppm. Convert this to units of molarity. The molecular weight of TCE is 131.5 g/mole.  
[3]