POST

CIVL 406
Midterm Quiz – March 2007

Time Limit: 40 minutes

Answer each question in the space provided. Be brief but complete. Mark value for each question given in brackets. Please put your **name and student #** at the top of the page.

Marks

(3) 1. What is your understanding of the term "potable drinking water"? What is meant by the terms "pathogens" and MPN"?

(3) 2. Taste and odour (T & O) are major issues associated with drinking water supplies. What causes T & O in groundwater sources? What usually causes T & O in surface waters? What does the term "sweeten the water" mean?

(4) 3. What is the difference between a "coagulation" and a "flocculation" process, in reference to colloidal suspensions? What is the relationship between electro-potential (EP) and coagulant valence, as well as EP and coagulant dose?

Marks

(5) 4. Describe the basic characteristics/problems associated with Type II settling. Briefly, outline the lab analysis/testing procedure involved in evaluating this type of settling.

(5) 5. Filtration is a process that removes suspended solids by three different means – explain! Slow sand filters are always preceded by a storage basin – what function(s) does this basin serve?

(5) 6. Distinguish clearly between "free residual chlorine" and "combined chlorine". What does the concept of "C • t product" mean to you, in reference to disinfection? Identify at least 5 variables that influence C • t.

(25)

D.S.M.
03/07

POST

CIVL 406
Midterm Quiz – March 3, 2008

Time Limit: 35 minutes

Answer each question in the space provided. Be brief but complete. Mark value for each question given in brackets. Please put your **name and student #** at the top of the page.

Marks

(3) 1. What is the accepted understanding of the term "potable drinking water"? What do we understand by the terms "pathogens" and "MPN"?

(3) 2. Distinguish clearly between "hardness" and "alkalinity" in a natural water supply. What characteristic most determines the various alkalinity species found in natural water? What are the three species possible?

(4) 3. Define the meaning of the terms "coagulation" and "flocculation", in reference to colloidal suspensions. What is the relationship between particle electro-potential (EP) and coagulant valence, as well as EP and coagulant dose?

Marks

(5) 4. Describe the characteristics of Type II settling. Briefly, outline the total "procedure" involved in analyzing this type of settling, both lab and analytical.

(4) 5. Filtration is a process that removes suspended solids by three different means – explain briefly. What are the fundamental operational differences between a slow Sand Filter and a Rapid Sand filter, (at least in your opinion)?

(6) 6. What are some recognized disadvantages of (a) UV disinfection, and (b) ozone disinfection? Distinguish clearly between "free residual chlorine" and "combined chlorine", as far as chlorine species are concerned.

What does the concept "C·t product" mean to you, in the disinfection world?

(25)

D.S.M.
03/03/08