

PARA3002 TUTORIAL

DRIP QUIZ

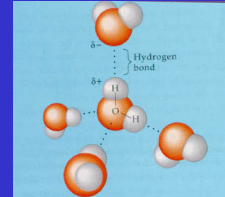


1

PARA3002 TUTORIAL

1. What is unique about dihydrogen monoxide!

- asymmetrical molecule
- polar charge
- cohesion (binding)
- adhesion (wetting)

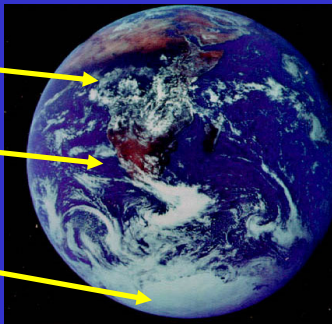


2

PARA3002 TUTORIAL

2. Name the 3 physical states of water

- gas (water vapour)
- liquid (fluid)
- solid (ice)*floats!



3

PARA3002 TUTORIAL

3. Why is water the fluid of life?

Universal solvent dissolves:

- salts
- sugars
- proteins
- nucleotides [but not fat]



Cells composed of 70-95% water

4

PARA3002 TUTORIAL

4. What parameters are used to indicate water quality?

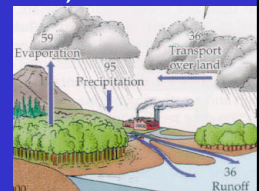
- **physical** (turbidity, temp, hardness, conductivity)
 - **chemical** (pH, organics, inorganics, electrolytes, gases, metals...)
 - **biota** (viruses, bacteria, fungi, protista, metazoa)
- abiotic
- biotic

5

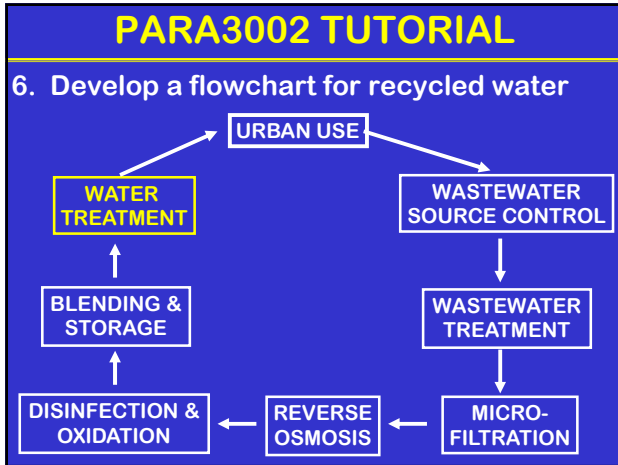
PARA3002 TUTORIAL

5. What are the 4 major sources of water contamination?

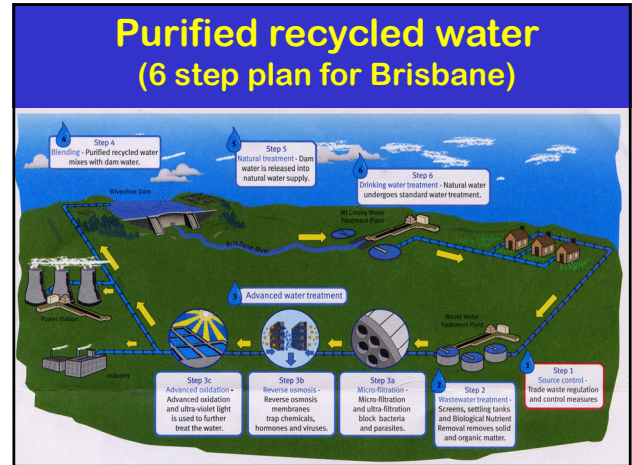
- human waste (sewage)
- animal waste (agricultural run-off)
- domestic waste (effluent)
- industrial waste (effluent)



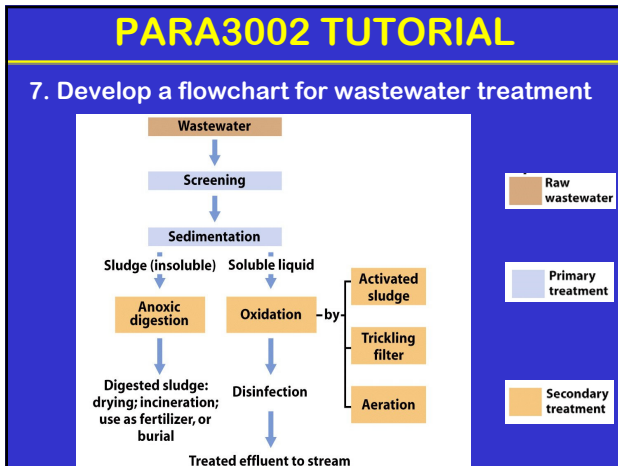
6



7



8



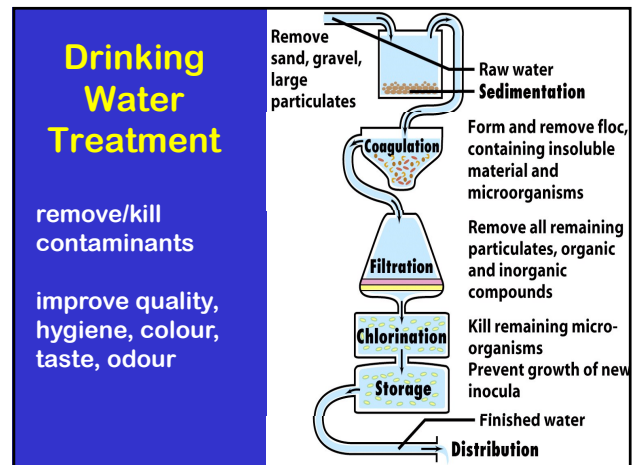
9

- ## PARA3002 TUTORIAL
8. Name 4 processes to decontaminate water (i.e. remove contaminants)
- sedimentation (tank, reservoir)
 - flocculation/coagulation (alum)
 - filtration (sand, membrane, micro)
 - adsorption (carbon)

10

- ## PARA3002 TUTORIAL
9. Name three processes to disinfect water (i.e. kill contaminants)
- heat (boil, solar)
 - chemical (chlorine, chloramine, chlorine dioxide, ozone)
 - energy sources (UV, gamma, X-ray, high energy electron sources)

11



12

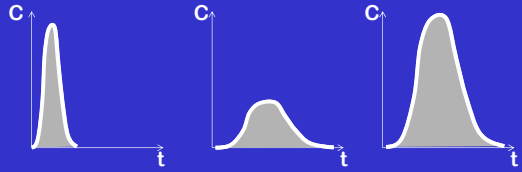
PARA3002 TUTORIAL

10. Watson's Law states that $K = C.t$

where C = concentration of disinfectant

t = time of contact

What does K represent?



AUC = total exposure to disinfectant

13

What price water?



14