


PARA3002 TUTORIAL

DRIP QUIZ

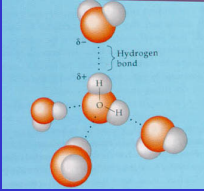


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1. What is unique about dihydrogen monoxide!

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

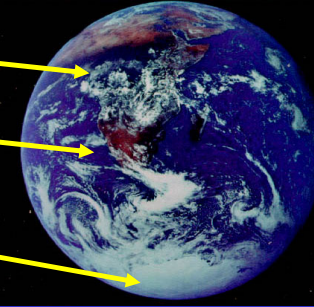


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2. Name the 3 physical states of water

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




3

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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

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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

}

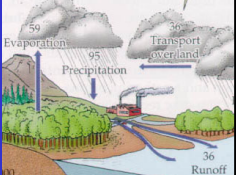
biotic

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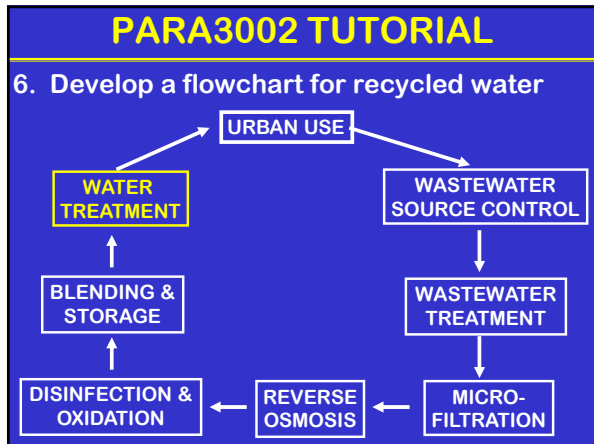
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5. What are the 4 major sources of water contamination?

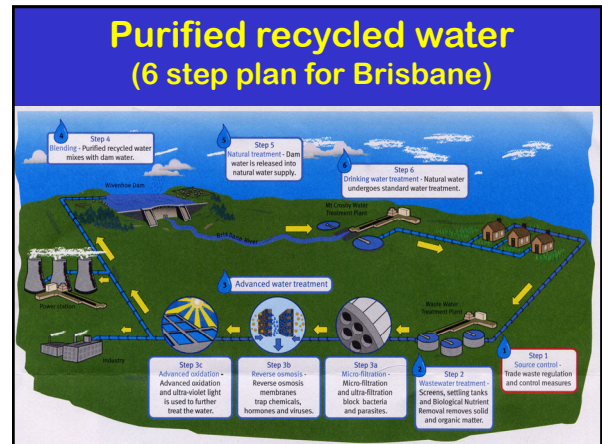
- human waste (sewage)
- animal waste (agricultural run-off)
- domestic waste (effluent)
- industrial waste (effluent)



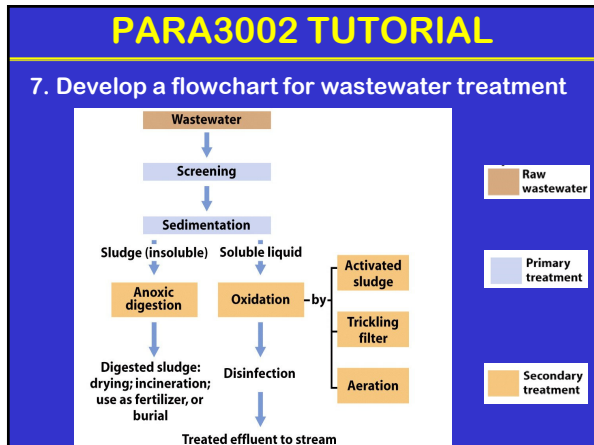
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8. Name 4 processes to decontaminate water (i.e. remove contaminants)

- sedimentation (tank, reservoir)
- flocculation/coagulation (alum)
- filtration (sand, membrane, micro)
- adsorption (carbon)

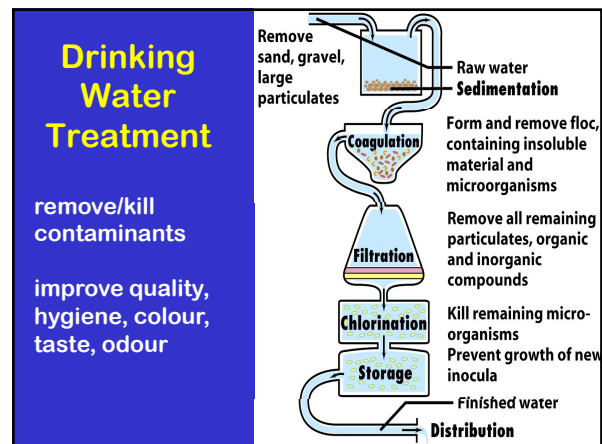
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9. Name three processes to disinfect water (i.e. kill contaminants)

- heat (boil, solar)
- chemical (chlorine, chloramine, chlorine dioxide, ozone)
- energy sources (UV, gamma, X-ray, high energy electron sources)

11



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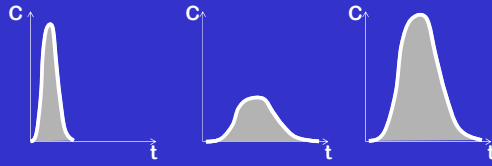
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10. Watson's Law states that $K = C \cdot t$

where C = concentration of disinfectant

t = time of contact

What does K represent?



AUC = total exposure to disinfectant

13

What price water?



14