

Aquatic Toxicology ETOX 80e
Review Questions for Final

What is eutrophication? What are its causes? What are the consequences of eutrophication in aquatic systems and how do they occur?

Why is chloroform found at low levels in the majority of tap water in the US? How do the effects of chloroform differ in male and female mice, and how were these differences studied?

Diagram and explain two ways that xenoestrogens can disrupt cell signaling or hormone function.

List the four primary classes of pesticides based on chemical structure. To which of these four classes do the pesticides Parathion and DDT belong?

What is the source of selenium in the Kesterson reservoir and wildlife refuge? What organisms have been most affected, and describe how human activities have exacerbated the problem of selenium in this area.

What are the 5 major hepatitis viruses currently recognized, what is the route of transmission for each one, and for which is there currently a vaccine available?

List seven anti-microbial agents used for disinfection purposes.

Why was chlorination of drinking water in Lima, Peru stopped in the early 1990's? What problem did this lead to?

If the sulfide minerals which are oxidized to cause acid mine drainage occur naturally in metal-sulfide deposits, why does acid mine drainage only occur after humans have extracted the ore?

What adverse effects does DDT have on humans? What adverse effects does DDT have on other organisms, being sure to use at least 2 examples of different species.

Give 6 desirable characteristics of a pesticide.

What are the two primary daughter products of DDT?

What toxicant caused the Kanemi cooking oil disease? What symptom did victims commonly exhibit?

Give 5 findings of autopsies of belugas whales from the St. Lawrence Seaway that could help explain the reduction in the beluga whale population there.

Give three roles estrogen plays in male humans.

What compound was found to be responsible for a reduction in alligator numbers in Lake Apopka? Describe in detail the experiment, and it's outcome, which helped researchers determine this.

What was DES given to women for? What adverse effects did this have on DES daughters and sons, listing 2 for each.

Give three methods for cleaning up VOC's from non-arid subsurface soil. Choose your favorite of these methods and give three advantages and three disadvantages.

Describe five ways that oil spills adversely impact marine organisms and provide examples for each of these.

Describe three ways that anthropogenic sound may harm marine mammals

Why should there be a global ban on DDT?

Why should there NOT be a global ban on DDT?

How can "natural" pesticides (i.e. pyrethroids and carbamates) harm (a) humans, and (b) the environment?

Describe four methods of removing VOC's from groundwater.

Discuss Bruce Ames's argument that is concerned with industrial chemicals as an environmental cancer distraction.

What are the six major factors contributing to emerging infectious diseases?

Why are chlorine and bromine the only two halogens of interest to the problem of THM's? (i.e. why are iodine and fluorine inconsequential with respect to the problem of THM's?)

Mix and match each pathogen with its corresponding common name or namesake:

<i>Salmonella typhi</i>	Montezuma's Revenge
<i>Shigella</i>	Chryosporidosis
<i>Cryptosporidium parvum</i>	the American Legion (PA)
<i>Lgionella pneumophilia</i>	"Campaign Fever"
enterovirulent <i>Escherichia coli</i>	typhoid fever

What are the two mechanisms by which endocrine disruptors can act as toxicants?

How many established Hepatitis strains have been identified? Specifically, which of these strains are transmitted via fecal-oral route and which are transmitted via blood? Lastly, which organ to all Hepatitis strains commonly target?

Describe the process by which acid mine drainage is generated. (include relevant geochemical and physical processes)

What are the (8) desirable characteristics of a pesticide?

What primary factors influence the toxicity of pesticides?

Mix and match each class of pesticides with its corresponding identifiable information. Also provide one example (from lecture) for each class.

Inorganic compounds	Tailored to target specific pests
Organochlorines	Responsible for declining bee diversity in N. America
Organophosphates	Derived from Chrysanthemum flowers
Carbamates	Not biodegradable whatsoever
Pyrethroids	First synthesized during the 19th century
Biological	High mammalian toxicity (3000 poisonings/yr still)