CH3041 Tutorial 9
Pesticides, Toxic Aromatics & Heavy Metals

Name:

1. DDT was used in a widespread manner in the period immediately preceding and subsequent to WWII. Explain why the use of DDT was finally banned and why the replacements for DDT such as Fenthion (an organophosphate) have been successful.

2. Dioxins and PAHs are important organic environmental pollutants.
   - Using examples discuss how these chemicals get into the environment and why they have similar toxicological effects.

3. During the 1950s and 60s the Pacific Gas &Electricity used water containing chromium 6, Cr(VI), to cool pipes at their Compressor Station in Hinkley, CA. The tainted water was then discharged into local groundwater supplies and used by local residents. The discharged chromium 6 in the groundwater attained levels approaching 24 ppm in the wells which were sampled while the recommended drinking water limit in the US is 5 ppb.
    - How would you approach testing for such a toxicant.
    - What effects would you expect to see from the introduction of such elevated levels of Cr(VI) in a water supply?

4. Lead has an ancient history as a poison. Discuss the relative magnitudes of the **natural** and **anthropogenic inputs** of lead into the environment and what effects lead has on humans who intake significant quantities of the element.