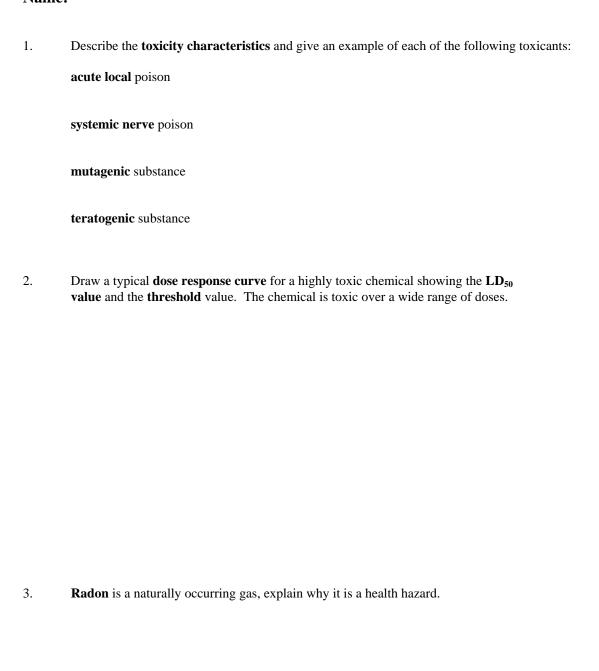
## CH3041 Tutorial 7 Toxicology & Nuclear Chemistry

## Name:



4.	Explain why so much more energy can be liberated by the nuclear reaction of 1 mol of a
	<b>fissionable element</b> than can be liberated by a chemical reaction (eg. combustion) of
	1 mol of a non-radioactive element. Illustrate your answer using equations.

5. A proposed method of storing the high level waste from nuclear power plants involves processing using the Synroc process into a stable mineral which is then buried in deep wells. **Plutonium** ( $^{239}$ Pu) is the highly toxic chemical which is most troublesome in this high level waste as it has a half life of 2.4 x  $10^4$  years. The plutonium activity is required to decrease to 0.1% of it's initial value at burial for the material to be 'safe'. Calculate how long this will take.