Name Date

**Nuclear Chemistry Section 2 Pre-Lecture**

1. Who discovered radioactivity?
2. Define radioactive decay.
3. What is nuclear radiation?
4. Define radioactive nuclide.
5. Define an alpha particle.
6. What type of atoms is alpha emission generally restricted to?
7. What happens to the mass number and atomic number of an atom undergoing alpha emission?
8. Where are the atoms that undergo alpha emission located on the band of stability?
9. Define a beta particle.
10. What types of atoms undergo beta emission? Where are they located on the band of stability?
11. What happens to the mass number and atomic number of an atom undergoing beta emission?
12. Define a positron.
13. What types of atoms undergo positron emission? Where are they located on the band of stability?
14. What happens to the mass number and atomic number of an atom undergoing positron emission?
15. Define electron capture.
16. What types of atoms undergo electron capture? Where are they located on the band of stability?
17. What happens to the mass number and atomic number of an atom undergoing electron capture?
18. Define Gamma rays.
19. What model is supported by gamma ray emission?
20. Define Half-life.
21. How can we use half-life to date ancient artifacts?
22. What is a decay series?
23. Define parent nuclide and daughter nuclide.
24. Define artificial transmutations.
25. All elements beyond which element are produced by artificial transmutation?