HALF-LIFE WORKSHEET

{Use Reference Table H of the N. Y.S. Chemistry Regents Reference Tables to assist you in answering the following questions.}

1 How long does it take a 100.00g sample of Au-l 98 to decay to 6.25g?

2. How many half-lives will pass by the time a 60.0g sample of Co-60 decays to 7.59?

3. How long does it take a 180g sample of Au-198 to decay to 1/8 its original mass?

4. What fraction of a sample of N-16 remains undecayed after 43.2 seconds?

5. What is the half-life of a radioactive isotope if a 500.0g sample decays to 62.5g in 24.3 hours?

6. How old is a bone if it presently contains 0.3125g of C-14, but it was estimated to have originally contained 80.000g of C-14?

7. If you are injected with 1.0000 mg of Tc-99, how long will it take
for the sample to decay to 1/64 of its original mass?

8. What is the half-live of a radioactive isotope if it takes 6.2 days for a 72g sample to decay to 18g?

9. Cs-137 is produced as a waste product in nuclear fission reactors. What fraction remains undecayed after 241.84 years?

10. How many half-lives of K-37 will pass after 6.15 seconds?

11. What fraction of Pu-239 (an artificially produced isotope used as a fuel in some nuclear fission reactors) remains undecayed after 219,600
years?

12. If a 700.00g sample of I-131 decays to 43.75g, how much time has passed?

13. How long will it take a 3.5g sample of Fr-220 to decay so that only 1/4 of the original amount of Fr-220 remains?

14. What is the half-life of a radioisotope if 1/16 of it remains undecayed after 26.4 days?

15. H-3 (tritium) is an artificially produce radioisotope used in some nuclear reactions. How much of a 1.000 kg sample remains undecayed after 85.82 years?