# Practice Problems Weeks 1 & 2

1. What is the mgRaeq strength of a Cs-137 source that is 3 years and 3 months old with an original strength of 10.5 mg Raeq?

2. How many mCi of Cs-137 are needed to be equivalent to 1mg of Ra-226? The exposure rate constants for Ra-226 and Cs-137 are 8.25 and 3.23, respectively.

3. How many mCi of Ir-192 are present in 20 mgRaeq? The exposure rate constant of Ir-192 is 4.64.

4. What is the initial activity of some Pd-103 seeds that currently have an activity of 70 mCi and were implanted in a patient 2 weeks ago?

5. How many Bq is 500 mCi of I-125?

6. A set of I-125 sources has an activity of 59.6 mCi, what will the activity be in 24 days?

7. What is the exposure rate from a 30 mCi Ra-226 source at 10 cm from the source?

8. How many mCi is 1.5E8 Bq of Co-60?

9. The exposure rate from a 10 Ci Ir-192 source at 1m is 4.6 R/hr. What is the dose rate at this point?

10. A 78 mCi Ir-192 source decays down to 53.9 mCi. How long does this take?

11. The exposure rate from a 35mgRaeq Cs-137 source is 3R/hr at 10cm. The source is left in place for 3 days. What is the dose to this point?

12. How many Bq is a 40mgRaeq Ra-226 source?

13. What is the exposure rate at 2 cm from a batch of Pd-103 seeds that total 25mgRaeq?

14. Element "C" has an activity of 78 mCi. After 4 years it has an activity of 3 mCi. What is the half-life of element "C"?

15. You have a 1μCi (micro-Curie) Cs-137 check source. How many Bq is this?