

PDF Quiz 11: Applications of nuclear material  
RDCH 702  
Assigned 28-Nov-18  
Due 3-Dec-18

Last Name: \_\_\_\_\_

First Name: \_\_\_\_\_

1. What is the role of  $^{63}\text{Ni}$  in the detection of explosives?

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2. Positron emitters are not produced as fission products. Why?

- Short half-life isotopes not possible to isolate as a fission product
- Heavier mass isotopes only decay through electron capture
- Fission products are neutron rich and decay through beta particle emission
- Positron emitters can be produced as fission products

3. What is the chemical form of Ra used in an existing, approved radiopharmaceutical?

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4. Identify isotopes that can have therapeutic effects in radiopharmaceuticals

- $^{177}\text{Lu}$       $^{18}\text{F}$       $^{81\text{m}}\text{Kr}$       $^{225}\text{Ac}$       $^{99\text{m}}\text{Tc}$       $^{213}\text{Bi}$       $^{131}\text{I}$

Digital Signature: \_\_\_\_\_