

Phys 586 Homework

Problem Set 5

Due Wednesday, April 7

1. Knoll 5.3
2. Knoll 5.14
3. Knoll 6.2
4. Knoll 6.4
5. An air ionization chamber records a charge of 20 nC during irradiation with a 6-MV x-ray beam. How much energy was deposited in the air by the beam?
6. The dose to air in an ionization chamber irradiated by a 6-MV photon beam is found to be 1 Gy. What is the dose to water replacing the air?
7. You may remember reading about the Russian spy Alexander Litvinenko who was reportedly poisoned by ^{210}Po . What is the activity of 1g of ^{210}Po ? Assuming that a lethal dose corresponds to 5 Sv, what was the mass of ^{210}Po ingested?