(6.10) An experiment is done with ^{60m}Co which emits 0.05860 MeV γ. The detector used is a NaI crystal. What photo peaks will be observed if the electron binding energies in sodium are K 1072 and L 63 eV, and in iodine K 33170 and L 4800 eV?

$eV := 1.60217733 \cdot 10^{-19} \cdot joule$ $keV := 1000 \cdot eV$ $MeV := 1000 \cdot keV$

$E_\gamma := 0.05860 \cdot MeV$ This is the full γ-energy

The observed lines correspond to the photo electron energies. Hence:

$E_b := 1072 \cdot eV$ $E_e := E_\gamma - E_b$ Eqn.(6.23) $E_e = 57.53 \cdot keV$ Na_K

$E_b := 63 \cdot eV$ $E_e := E_\gamma - E_b$ $E_e = 58.54 \cdot keV$ Na_L

$E_b := 33170 \cdot eV$ $E_e := E_\gamma - E_b$ $E_e = 25.43 \cdot keV$ I_K

$E_b := 4800 \cdot eV$ $E_e := E_\gamma - E_b$ $E_e = 53.80 \cdot keV$ I_L