(每題 10 分,共十題)

1. What is Auger electron? What is the energy range of a typical Auger electron?
2. What kinds of isotope are produced by a reactor? What are the isotopes produced by a cyclotron?
3. What is the property of the stochastic effect of radiation?
4. What is the full name of TLD? What is the principle of TLD dosimetry?

5. $^{22}_{11}Na$ ($t_{1/2}$=2.6 y) shows two modes of decay to the excited states of neon (the excess energy of 1.275 MeV is emitted as a gamma ray), 90% by positron (with energy of 0.546 MeV) and 10% by electron capture. Please draw the decay scheme of this sodium to neon. Note that the atomic mass decrease between $^{22}_{11}Na$ and $^{22}_{10}Ne$ is 2.843 MeV.

6. What is the dead time of a detector system? Describe a method to measure the dead time.
7. Define "LET" and "restricted LET".
8. Describe the characteristic curve of a gas-filled chamber (number of ions collected vs applied voltage).
9. What is Compton scattering?
10. Describe the kerma and absorbed dose as a function of depth when a photon entering a medium.