

**Quiz 3**

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**2/20/24**

- 3.1) Formulate the five terms contributing to the binding energy in the Weizäcker (or quantum liquid drop) model.
- 3.2) Formulate the binomial distribution and explain the variables.
- 3.3) Formulate the Poisson distribution and explain the variables.
- 3.4) What is the probability that there will be no events in a time interval  $\Delta t$ ?
- 3.5) State Fermi's Golden Rule for radioactive decays.
- 3.6) Define the number of possible final states in the final momentum interval  $p' + dp'$ .
- 3.7) Define the invariant mass  $W$  for a two body system.
- 3.8) Define the helicity of a particle.
- 3.9) You have measured the probabilities  $P_{11} = 0.0082$  and  $P_{10} = 0.018$  for eleven and ten random events in the time interval  $\Delta t$ . Calculate the average value  $\mu$ .