Early Universe: BBN physics

Review questions

1. What is the typical energy scale associated with nuclear fusion and fission processes?

   a) 10 keV

   b) 10 GeV

   c) 10 eV

   d) 10 MeV

2. Based on your answer to the previous question, what would be a rough estimate of the temperature required for deuterium synthesis?

   a) $\sim 10^4$ K

   b) $\sim 10^6$ K

   c) $\sim 10^8$ K

   d) $\sim 10^{10}$ K

3. Using the estimated temperature from the previous question, at what time after the Big Bang does deuterium synthesis occur?

   a) $\sim 10^{-3}$ sec.

   b) ~ 1 minute

   c) ~ 1 day

   d) ~ 1 year

4. Explain the reasoning behind the statement that an ideal or most stable universe would be one in which baryonic matter primarily consists of an iron-nickel alloy.