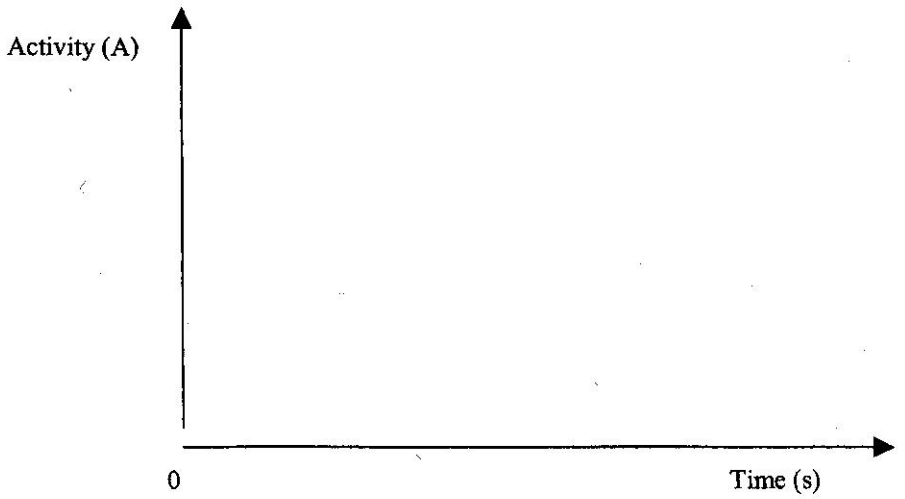

(ii) A radioactive sample of half-life 130 days initially has 1.0×10^{20} radioactive atoms. Determine the number of radioactive atoms that have decayed after 390 days. (3 marks)

Weakness

Candidates were found to have the following weaknesses:

- Curves for 2M and M interchanged
- Curves drawn parallel. Candidates confused activity curves with isothermal curves. Others drew the two curves originating from the same point implying same activity.
- Inability to relate the half life of the sample with the original number of atoms and the number of atoms after given time t.

Expected Response

(i)