

# Chemistry

## Section I – Part B (continued)

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**Question 19** (5 marks) **Marks**

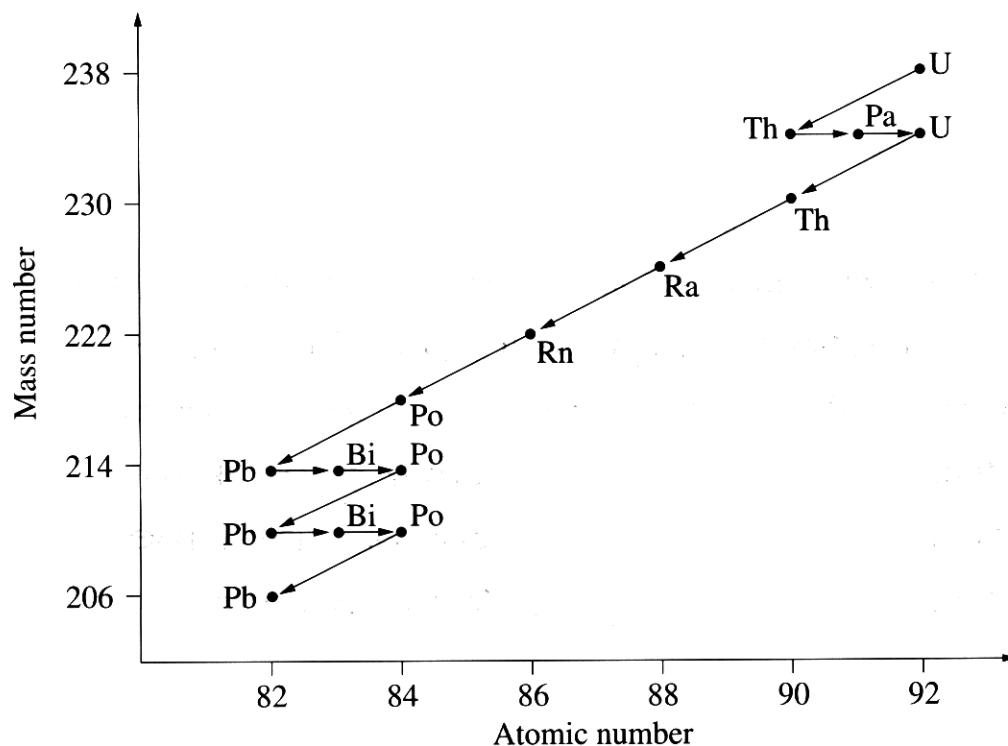
- (a) Describe the conditions under which a nucleus is unstable. 2

The nucleus is unstable when a cell is under pressure, and this pressure puts force on the nucleus. It is also unstable when oxidation, reduction reactions are occurring as they disrupt the outer shell and eventually the nucleus, either gaining or losing electrons.

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Question 19 (continued)

- (b) The following is a flow diagram showing the sequence of products released during the decay of uranium. 3



Use examples from the flow diagram to describe processes by which an unstable isotope undergoes radioactive decay.

Unstable isotopes undergo radioactive decay as the electrons in the shell are not stable, and are removed in dramatic rates, this can be seen with the radioactive decay of Pb, which halves its size every time.

End of Question 19