

## PART II

Attempt **TWO** questions in this Part, which carries 24% of the marks for the examination. All of these questions carry equal marks. You are advised to spend about **40 minutes** on this Part. Write your answers to this part in the **SEPARATE ANSWER BOOK** provided.

Remember to write your name, personal identifier and examination number on your answer book.

### Question 1

part a, 10%

part b, 2%

(a) Sketch a section through the Sun. On your sketch show and label

- the core where nuclear reactions are taking place
- the radiative zone
- the convective zone
- the photosphere

Beneath your sketch state

- the effect of the nuclear reactions in the core on the composition and on the temperature (detailed nuclear reactions are not required)
- why the reactions are confined to the core
- the composition at the photosphere and at the centre, and why the compositions are different (a qualitative statement will do).

(b) Outline why the Sun is stable, in that it is not contracting under its own gravity.

