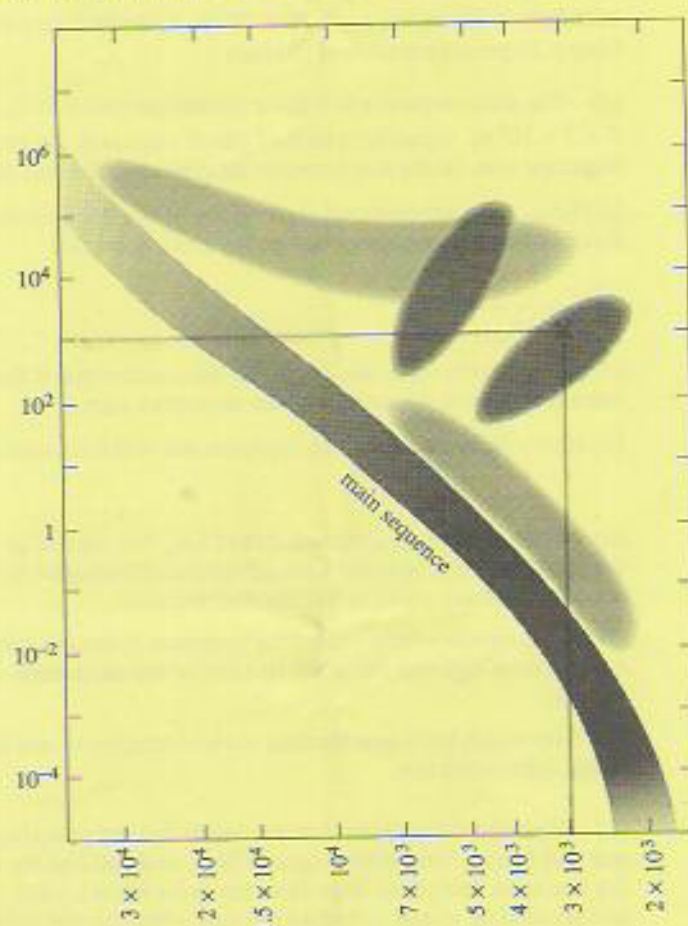


## PART II

### Question 1 part a, 8% part b, 4%

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.



**Figure 2** A Hertzsprung-Russell diagram.

- (a) (i) Describe the quantity that is plotted along each axis in Figure 2, and state the unit in which each is measured.
- (ii) For each of the two quantities in (i), describe, with the aid of sketches, how its value for a star can be obtained from measurements on the stellar spectral absorption lines.
- (b) State the type of star at the point marked X in Figure 2. Calculate its radius, expressing your answer both in metres, and in terms of the solar radius.