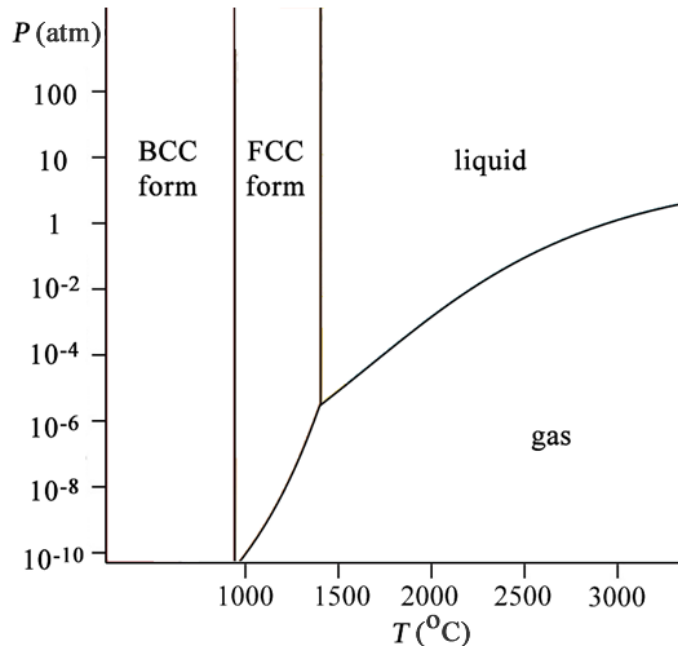


- xA simplified phase diagram for iron is shown below.

**Marks**  
**5**



Which form of iron is stable at room temperature and pressure?

If molten iron is cooled slowly to around 1200 °C and then cooled rapidly to room temperature, the FCC form is obtained. Draw arrows on the phase diagram to indicate this process and explain why it leads to the FCC form.

The line dividing the BCC and FCC forms is almost, but not quite vertical. Given that the FCC form is more efficiently packed, predict which way this line slopes. Explain your answer.