8 In some power stations, nuclear fission is used as a source of energy.

For Examiner's Use

(a) State what is meant by *nuclear fission*.

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.....[2]

(b) The nuclear fission reaction produces neutrons. In the power station, the neutrons may be absorbed by rods made of boron-10.
Complete the nuclear equation for the absorption of a single neutron by a boron-10 nucleus with the emission of an α-particle.

$$^{10}_{5}B + \text{.....} \rightarrow \text{.....}^{}_{3}Li + \text{.....} \quad [3]$$

(c) Suggest why, when neutrons are absorbed in the boron rods, the rods become hot as a result of this nuclear reaction.

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.....[3]