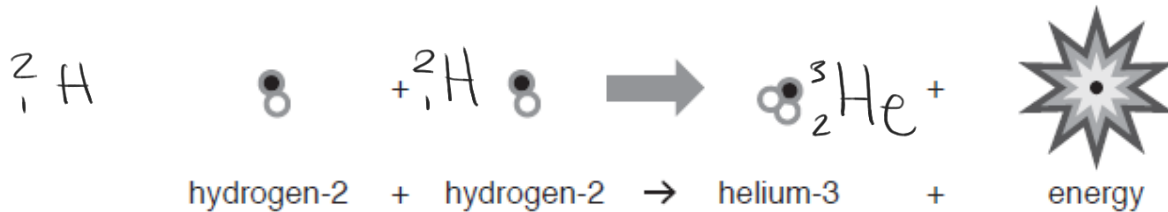


GCSE Physics A (Gateway)

J249/04 Physics A P5-P8 and P9 (Higher Tier)

Question Set 9

- 1 (a) Nuclear **fusion** is a reaction that happens in stars. This equation for fusion is incomplete.



- (i) What else is produced in this reaction?

A neutron (${}^1_0\text{n}$)

[1]

- (ii) Stars are formed from dust and gas.

What causes the dust and gas to undergo fusion?

A lot of heat and pressure
(due to gravity)

[1]

- (b) (i) Describe one **similarity** between nuclear fission and nuclear fusion.

They both release a lot of energy
They do not release greenhouse gases

[1]

- (ii) Describe one **difference** between nuclear fission and nuclear fusion.

Fusion requires much much more energy than fission
Fusion's products are much less radioactive than fission

[1]

- (i) Nuclear fission can be used as a power source to produce electricity.

Give one **advantage** and one **disadvantage** of using nuclear power to produce electricity.

advantage ... Releases no greenhouse or toxic gases

disadvantage ... Produces highly radioactive products

[2]

Total Marks for Question Set 9: 6

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