

GCSE Physics B (Twenty First Century Science)
J259/01 Breadth in Physics (Foundation Tier)

Question Set 12

- 1 Nina is writing a report about the Solar System.
She has written an introduction.

The planets in our Solar System all move around the Sun.
They orbit in perfect circles and in the same direction.
Each planet has at least one moon orbiting it.
The planets and their moons are all made of rock.

- (a) Identify **two** mistakes in Nina's introduction.
Not all planets are made of rock and they don't all have moons [2]

- (b) Nina wants to include a section about how the Solar System was formed.
Describe how the Solar System was formed. [2]
Clouds of dust and gas were pulled together by gravity

- (c) Nina researches how the Sun releases energy. She finds this information in a textbook.

The Sun releases energy by nuclear fusion. The Sun emits about 4×10^{26} J of energy every second. As a result, its mass falls by about 4 billion kilograms every second.

Explain why nuclear fusion causes the mass of the Sun to decrease.

The fusion of hydrogen and other elements converts mass to energy as radiation [1]

Total Marks for Question Set 12: 5

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