Practice Question Set For GCSE
Subject : Physics
Paper-1 Topic : 6_Radioactivity

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Name of the Student:_____
Max. Marks : 19 Marks **Time : 19 Minutes**

Q1.

Sulfur-35 is a radioactive isotope of sulfur.
Figure 11 represents a nucleus of sulfur-35.

$^{35}_{16}S$

Figure 11

Draw one line from each type of particle to the number of that type of particle in a nucleus of sulfur-35.

(3)

type of particle	number of particles
proton	35
neutron	16
nucleon	51
	19

(Total for question = 3 marks)

Q2.

***** Medical physicists have developed endoscopes and many other devices to help doctors diagnose medical problems.

Compare the use of electromagnetic radiation in endoscopes and in one other diagnostic device.

(6)

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Q3.

Describe how the emissions from radioactive substances can be dangerous to living things.

(2)

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Q4.

The fuel in a nuclear power station is an isotope of uranium.

Describe how the thermal energy produced by the nuclear reaction is used to produce electricity.
You may draw a diagram to help with your answer.

(2)

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Q5.

Figure 8 shows a helium nucleus.

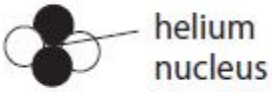

Figure 8

The energy released per kilogram of fuel in a fusion reaction is 845 000 GJ.

The energy released per kilogram of fuel in burning oil is 0.0394 GJ.

(i) Calculate the ratio of the energy released in fusion compared with the energy released in burning oil.

Use the equation

$$\text{ratio} = \frac{\text{energy released from fusion}}{\text{energy released by burning oil}}$$

(2)

ratio = ...

(ii) State **two** advantages of using a fusion reactor rather than burning oil in a power station.

(2)

1 .....

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2 .....

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(iii) State **two** of the difficulties that need to be overcome to produce a fusion reactor.

(2)

1 .....

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2 .....

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(Total for question = 6 marks)