Practice Question Set For GCSE

Subject : Physics

Paper-1 Topic : 6_ Radioactivity

Name of the Student:____

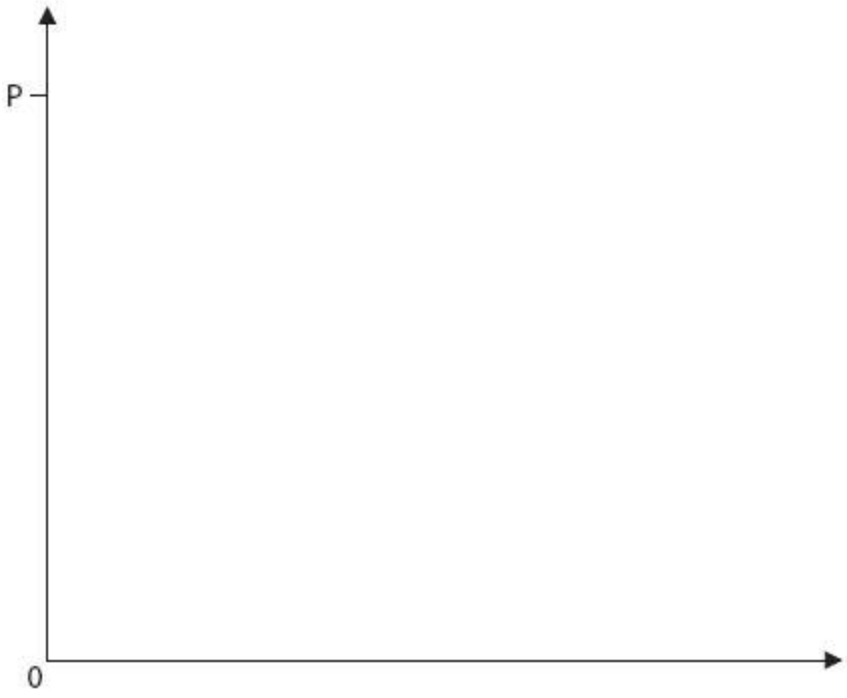
Max. Marks : 18 Marks **Time : 18 Minutes**

Q1.

Carbon-14 is a radioactive isotope that occurs naturally.
Scientists use carbon-14 to help find the age of old pieces of wood.
This technique is called carbon dating.
It uses the idea of half-life.

Sketch a graph to show how the activity of a radioactive isotope changes with time.
Use the axes below. Start your line from point P.

(3)



Q2.

A teacher sets up an experiment to show some students how far beta particles travel in air.

Figure 5 shows some of the equipment she uses.

(Source: *www.einstein.yu.edu*)

Figure 5

(i) State the scientific name for the radioactivity detector shown in Figure 5.

(1)

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The teacher also has:

- a radioactive source that emits only beta particles
- a metre rule.

(ii) State **two** precautions the teacher must take to protect herself from the effects of radioactivity.

(2)

1 ....

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2 ....

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(iii) Describe how the teacher could show how far beta particles travel in air.

(4)

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(Total for question = 7 marks)

Q3.

An isotope of krypton, krypton-89, is produced in a nuclear reactor.
A nucleus of this isotope can be represented as

$$^{89}_{36}\mathrm{Kr}$$

Describe the structure of a nucleus of krypton-89.

(4)

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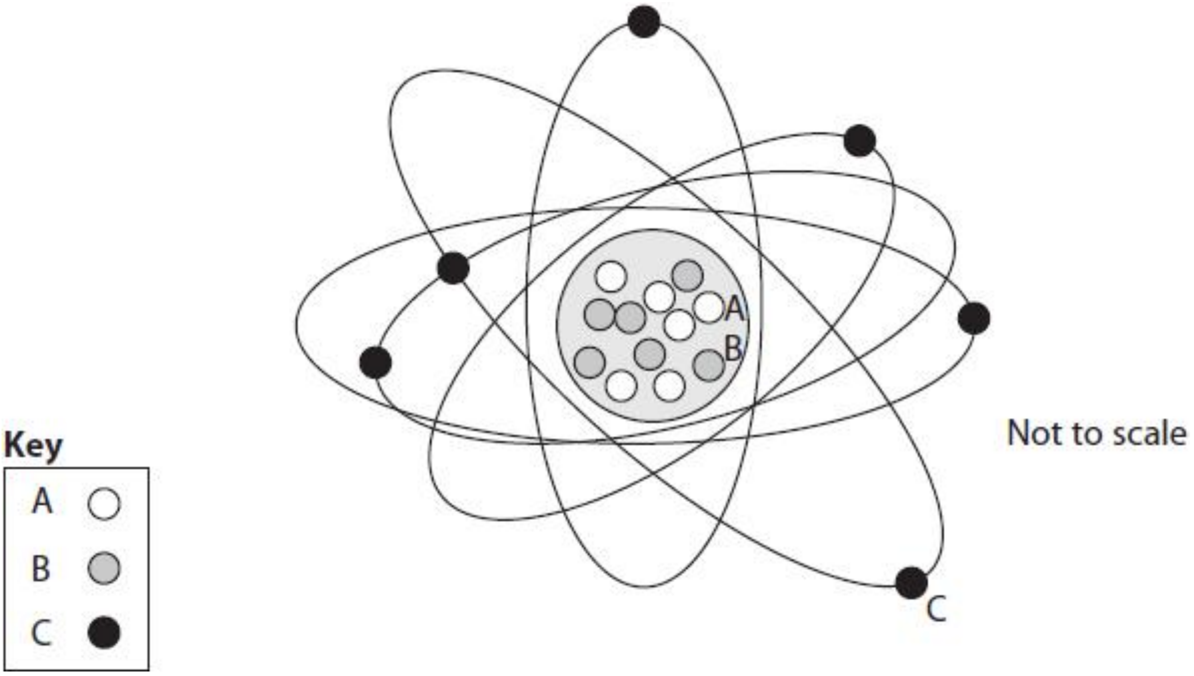
Q4.

The diagram shows an atom of carbon.

A, B and C are three different particles.



(i) Name the three different particles shown.

(3)

A = ...

B = ...

C = ...

(ii) What is the mass (nucleon) number of this carbon atom?

(1)

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