

Energy Sources

Question Paper 2

Level	Edexcel
Subject	Physics
Exam Board	GCSE(9-1)
Topic	Conservation of Energy
Sub Topic	Energy Sources
Booklet	Question Paper 2

Time Allowed: 39 minutes

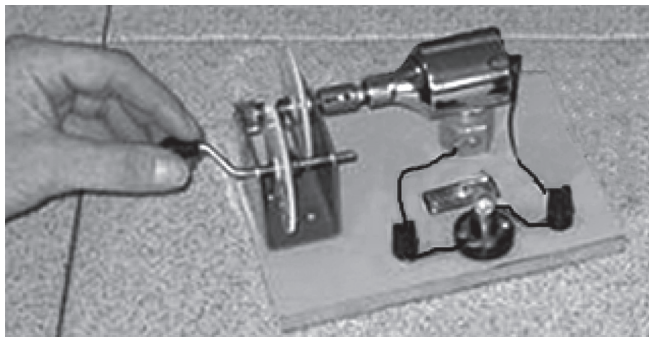
Score: /32

Percentage: /100

Generating electricity

1 The photograph shows a small generator.

When the handle is turned the current produced lights a lamp.



(a) (i) Complete the sentence by putting a cross (☒) in the box next to your answer.

The current produced

(1)

- A** usually comes from a battery
- B** always has the same frequency
- C** is always the same size
- D** is usually alternating in direction

(ii) State the unit in which electric current is usually measured.

(1)

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(b) (i) Describe what happens inside the generator to produce the current.

(3)

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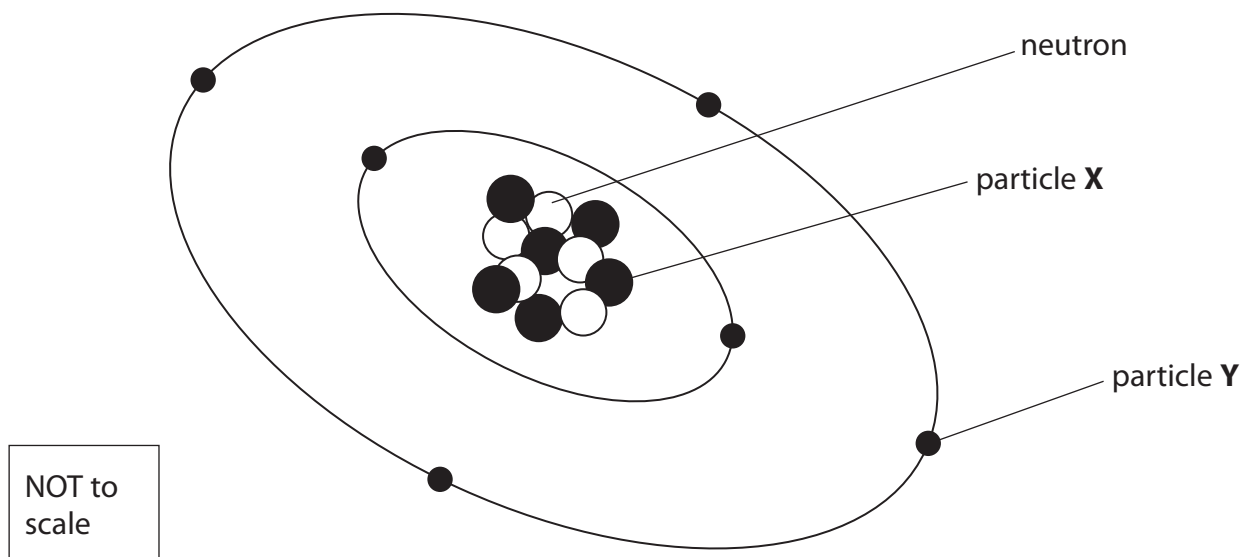
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Radioactive material

2 (a) The diagram represents an atom of carbon.



(i) State the name of particle X.

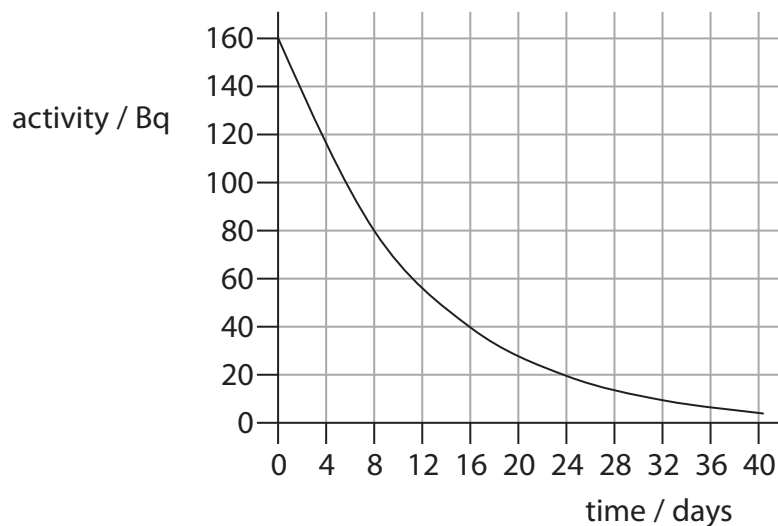
(1)

(ii) State the name of particle Y.

(1)

(b) Iodine-131 is a radioactive isotope of iodine.

The graph shows how the activity of a sample of iodine-131 decreases with time.



Investigating electric motors

3 Some students investigate the efficiency of electric motors.

(a) (i) The students find that one electric motor has an efficiency of 60%.

Explain in terms of energy what is meant by an efficiency of 60%.

(2)

.....

.....

.....

.....

(ii) The students use some motors to lift weights.

The students measure the input power and output power of two motors.

Complete the sentence by putting a cross (☒) in the box next to your answer.

The power of a motor is the rate at which it transfers

(1)

- A** current
- B** energy
- C** voltage
- D** charge

(iii) The first motor has a power rating of 20 W.

The motor is used for 15 s.

Calculate the energy supplied to the motor.

(2)

energy supplied to the motor = J

- (iv) In the second motor, the useful output power was 18 W when the input power was 24 W.
Calculate the efficiency of this motor.

(2)

efficiency = %

- (b) One of the students states that all of the energy supplied to a motor is transferred into other forms.

Complete the following sentence by putting a cross (☒) in the box next to your answer.

This statement is one example of the idea of

(1)

- A** renewable energy
- B** conservation of energy
- C** non-renewable energy
- D** sustainable energy

(Total for Question 2 = 8 marks)