Answer ALL questions.

Some questions must be answered with a cross in a box ☒. If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☒.

1 This is a question about radioactivity.

(a) Which of these is the unit of activity?

(1)

☒ **A** becquerel

☒ **B** kilogram

☒ **C** newton

☒ **D** pascal

(b) Which of these is the correct description of the term **half-life**?

(1)

☒ **A** time taken for the activity of a substance to halve

☒ **B** half of the time taken for the mass of a substance to decay

☒ **C** time taken for the activity to decay completely

☒ **D** time taken for the mass of a substance to decay twice

(c) A teacher demonstrates how the activity of a radioactive sample changes with time.

(i) The box gives the names of different pieces of equipment.

ruler	stopwatch	balance	newton meter
protractor	GM tube	voltmeter	ammeter

Complete the sentences using words from the box.

(2)

The teacher measures time with a ..... .

The teacher measures the count rate with a ..... and a counter.

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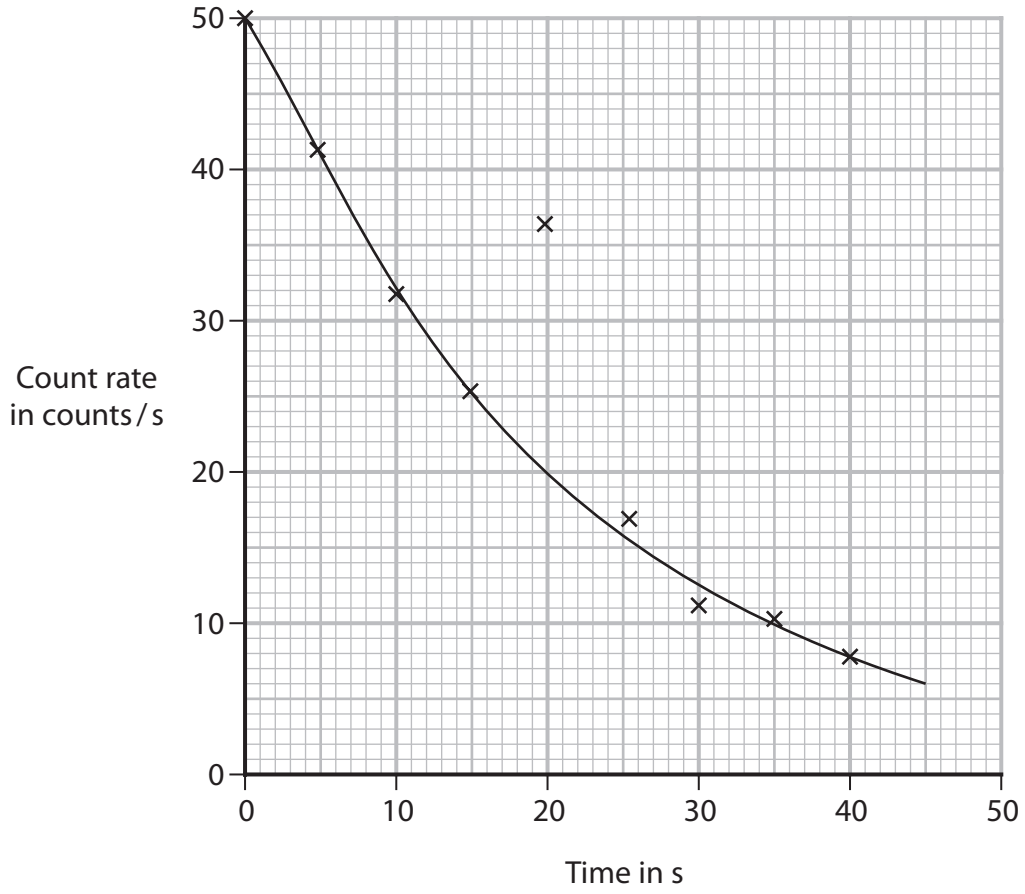
(ii) The graph shows the teacher's results.



Draw a circle around the anomalous result.

(1)

(iii) Use the graph to determine the half-life of the radioactive sample.

(2)

half-life = ... s

(iv) Give a reason why the teacher should not expect the data points to lie exactly on the curve of best fit.

(1)

.....

.....

(Total for Question 1 = 8 marks)