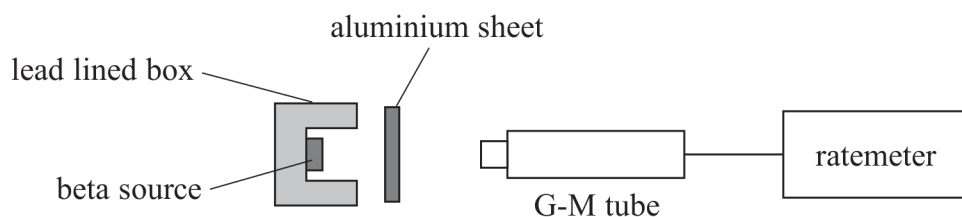


- 2 The absorption of beta particles in aluminium can be investigated using the apparatus shown.



- (a) State **two** safety precautions for this investigation.

(2)

- (b) A student planned to test whether beta particles are absorbed by aluminium according to the relationship

$$C = C_0 e^{-\mu x}$$

where

$C$  is the count rate when the thickness of the aluminium sheet is  $x$

$C_0$  is the count rate with no aluminium sheet

$\mu$  is a constant.

- (i) Explain why a graph of  $\ln C$  against  $x$  could be used to test the validity of this relationship.

(2)

(ii) Devise a plan to obtain the data required to test the validity of this relationship.

(6)

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

(Total for Question 2 = 10 marks)