

Name of the Student: _____

Max. Marks : 20 Marks

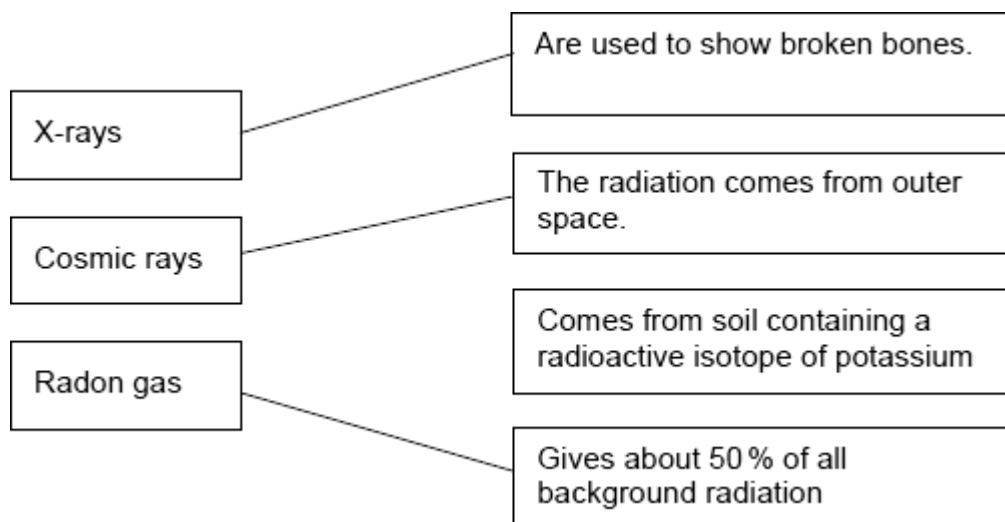
Time : 20 Minutes

Mark Schemes

Q1.

1 mark for each correct line

*If more than 1 line has been drawn from a box in **List A** then all those lines are marked incorrect.*



[3]

Q2.

- (a) alpha particles **cannot** pass through...

*do **not** accept gamma particles...*

or

alpha particles can pass through a very thin sheet of **paper / card**

credit answers where correct amendments are made to boxed statement

1

- (b) (i) horizontal and vertical line drawn at correct positions on the graph

accept a cross drawn at 4500 / 500 on the curve

or

two pairs of lines drawn, for example, at 600 and 300

accept a horizontal line drawn at 500 on its own

*do **not** accept vertical lines only*

1

- (ii) 4500 million years

1

- (iii) half-life too long
*do **not** accept simply its half-life is 4500 million years*

1

no (measurable) change in count rate
*do **not** accept have not got the equipment*
*do **not** accept it's harmful (to children)*
if neither of the above points scored, accept not enough time to measure it for 1 mark

1

[5]

Q3.

- (a) proton
electron
neutron

all 3 in correct order
allow 1 mark for 1 correct
*do **not** accept letters p, e, n*

2

- (b) 4

reason only scores if 4 is chosen

1

number of protons
accept number of electrons
accept there are 4 protons and 4 electrons
*do **not** accept there are 4 protons and electrons*

1

- (c) The atom loses an electron.

1

[5]

Q4.

- (a) (i) all correct
accept presented as a tally chart

Number of protons	3
Number of electrons	3
Number of neutrons	4

allow 1 mark for 1 correct

2

- (ii) 7

reason may score even if 7 not chosen

1

number of protons and neutrons

accept number of particles in the nucleus
accept number of nucleons
*do **not** accept number of electrons and neutrons*

1

(b) an ion

1

(c) (i) smaller than

1

(ii) radon loses an alpha (particle)

or

radon loses an (alpha) particle

or

(mass of) polonium plus an alpha = (mass) radon

or

radon loses 2 protons and 2 neutrons (to become polonium)

accept radon has less protons and neutrons

1

[7]