

Name of the Student: _____

Max. Marks : 18 Marks

Time : 18 Minutes

Mark Schemes

Q1.

(a) decrease

for 1 mark

1

(b) (i) none would go through paper

for 1 mark

1

(ii) all would go through paper

for 1 mark

1

(iii) only some absorbed/amount absorbed
depends on thickness of paper

for 1 mark each

2

(c) $1 \rightarrow 1/2 \rightarrow 1/4 \rightarrow 1/8$

for 1 mark

3 half lives/ 3×433

for 1 mark

1299 years

gains 3 marks

3

[8]

Q2.

(a) 1.
-1

for 1 mark each

2

(b) (i) 19p,
20n,
19e

all correct for 2 marks

2 correct for 1 mark

2

(ii) K40 has an extra neutron/different number of neutrons/

it has more neutrons/21 neutrons

for 1 mark

NOT fewer neutrons

1

- (iii) radioactive/unstable nucleus/ nucleus disintegrates/
emits radiation/it has too many neutrons*

for 1 mark

1

- (iv) calcium/Ca*

for 1 mark

1

- (v) 1 (e) in outer shell/same number of electrons/outer electron
same distance from the nucleus*

for 1 mark

1

- (c) (i) Geiger-Muller tube (photographic) film*

for 1 mark

1

- (ii) cancer, leukaemia, radiation sickness etc.*

for 1 mark

1

[10]