Practice Question Set For GCSE
Subject : Physics
Paper-1 Topic: Atomic Structure (High Demand)

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Name of the Student:_____
Max. Marks : 20 Marks **Time : 20 Minutes**

Mark Schemes

Q1.

(a) (i) (atoms with the) same number of protons
allow same atomic number
or *same proton number*
1

(atoms with) different number of neutrons
allow different mass number
1

(ii) 82
1

(iii) 124
1

(b) (i) $^{58}_{26}Fe + {}^{208}_{82}Pb$

1 *mark for each correct box*
3

(ii) (a) neutron
1

(iii) 4.0×10^{-4} (s)
or
0.0004
$3.00 \times 10^{8} \times 0.1 = 12\,000 / t$
gains ***1*** *mark*
2

(iv) particles need to travel a large distance
1

equipment would have to be very long
1

with circular paths long distances can be accommodated in a smaller space
1

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(c) (i) the average time for the number of nuclei to halve

1

the time for count rate to halve

1

(ii) $^{261}_{106}Sg + ^{4}_{2}\alpha$

1 *mark if top boxes total = 265*
and *bottom boxes total = 108*
1 *mark for 4 and 2 for alpha*

2

(d) (i) 3 plotted points
± ½ small square

1

best line through points

1

(ii) 190−205 (pm)
or correct from student's line

1

[20]

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