



# Mark Scheme (Results)

June 2014

Pearson Edexcel International GCSE  
Physics (4PH0) Paper 1P  
Science Double Award (4SC0) Paper  
1P

Pearson Edexcel Level 1/Level 2  
Certificate  
Physics (KPH0) Paper 1P  
Science (Double Award) (KSC0) Paper  
1P

Question number	Answer	Notes	Marks
4 a	(Atoms / nuclei with the) same number of protons; Different numbers of neutrons;	ALLOW relevant correct alternatives e.g. <ul style="list-style-type: none"> <li>atomic number, proton number</li> <li>nucleon number, atomic mass</li> </ul> ignore comments about electrons	1 1
b i	Electron;	ignore comments about properties of electrons e.g. speed ALLOW <ul style="list-style-type: none"> <li><math>e^-</math> or <math>e^+</math></li> <li>positron</li> </ul>	1
ii	any suitable detector e.g. Geiger(-Muller) tube/detector/counter; photographic film; zinc sulfide; gold leaf electroscope;	ALLOW <ul style="list-style-type: none"> <li>phonetic/incorrect spelling</li> </ul>	1
iii	beta penetrates paper; beta absorbed/stopped by lead +/- aluminium ;	IGNORE <ul style="list-style-type: none"> <li>all details of experimental setup</li> <li>beta goes through aluminium/eq</li> </ul> DO NOT ALLOW <ul style="list-style-type: none"> <li>bounced back for absorbed</li> <li>contradictions in answers e.g. re aluminium</li> </ul>	1 1

ii	<p>MP1. idea that it/half-life is <b>too</b> short OR idea that decay occurs <b>too</b> quickly/rapidly;</p> <p>PLUS</p> <p>MP2. (hence) <b>U / isotope</b> would (all) have decayed (long ago) OR <b>U activity</b> would be too small (to distinguish from background / to measure);</p>	<p>comparative of some sort needed for MP1 allow not enough time</p> <p>care that you do not award both alternatives for MP2 IGNORE granite decays it decays</p>	<p>1</p> <p>1</p>
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(Total for Question 4 = 15 marks)

