



# Mark Scheme (Results)

January 2012

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

**INTERNATIONAL GCSE PHYSICS 4PH0 4SC0 /1P – JANUARY 2012**

Question number	Answer	Notes	Marks
1 (a) (i)	A		1
(ii)	B		1
(b) (i)	C		1
(ii)	nearest above (DOP)		1
(iii)	Comment on device – (plastic) insulator / does not conduct;  Comment on user - no risk of shock / electrocution;	(double) insulated / no current (through) / cannot become live  No electricity reaches user / person cannot touch live parts	1 1

Question number	Answer	Notes	Marks
12 (a)	ANY FOUR – Conduction from hot plate to pan; conduction through pan; conduction from pan to water; convection in the water; conduction from water to potato; conduction through potato;		Max 4
(b)	ANY THREE – microwaves are electromagnetic waves; penetrate (a few cm) into the food; cause water molecules to vibrate more / heat water; conduction through the rest of the potato	no marks for whether or not the statement is true  needs ref to water, not just particles / molecules needs conduction ref, not just spreads out	Max 3
(c)	Any five from Electromagnetic induction; coil creates magnetic field around it; which cuts through the metal pan; field alternates / changes; inducing a voltage in the pan; causing a current in the pan; current makes the pan get hot;  which heats the water by conduction; water convects energy to potato;	Effect named – not just 'induction' (given in question)  Pan heating must be linked to current, not just 'the pan gets hot'	Max 5

**PAPER TOTAL: 120 MARKS**

