INTERNATIONAL GCSE PHYSICS PAPER 1P – SUMMER 2012

Question number	Answer	Notes	Marks
1 (a)	A - microwave(s) B - X–rays	REJECT 'micro' REJECT 'X' ACCEPT capital or lower case X, with or without hyphen	2
(b) (i)	C		1
(ii)	D		1

Total 4 Marks

Question number	Answer	Notes	Marks
4 (a) (i)	pressure = force ÷ area;	pressure = force ÷ area area = force ÷ pressure force = pressure x area Accept standard symbols (P, F, A) – upper or lower case acceptable for this item REJECT relationship 'triangle' on its own	1
(ii)	Substitution into correct equation / 8 times the force; Calculation; e.g. pressure = 8 x 0.036 ÷ 0.0013 = 220 (Pa)	Correct final value = 2 irrespective of working Final value of 27.7 or 28 scores 1 (since it is a correct calculation that has missed the x8 factor) ALLOW 222 (Pa), 221.5..... (Pa), 220 (Pa) for final value NO significant figure penalty	2
(b) (i)	(total) force is unchanged / the same; same mass/number/weight (of coins);	 ACCEPT 'force is the same because the weight is the same'=2 'force is the same because the mass is the same'=2	2
(ii)	Reduced / less; ONE of - (reduced) by a factor of 8; <u>same</u> mass/weight/force spread over a larger area; calculates the new pressure;	 NOT ACCEPT 'larger surface area' alone	1 1

Total 7 Marks

Question number	Answer	Notes	Marks
7 (a)	Any 4 of: heat loss is reduced / traps heat; <u>relating to the air being an insulator –</u> air is a (good) insulator / air insulates / air is insulation / air is a bad conductor /air reduces conduction; <u>relating to the blanket / fibres being an insulator –</u> blanket is a (good) insulator / blanket insulates / blanket is insulation / blanket is a bad conductor / blanket reduces conduction; <u>relating to convection –</u> air is trapped / blanket traps air / air movement reduced; convection (currents) reduced / convection (currents) stopped; <u>relating to sweating –</u> sweat cannot evaporate; (so) less cooling effect from sweating;	 seen anywhere in the answer ACCEPT 'air stops conduction / air does not conduct' ACCEPT 'blanket', 'fibres', 'cloth', 'fabric', etc as the same thing – 'it' refers to the blanket ACCEPT 'blanket stops conduction / blanket does not conduct' ACCEPT 'air cannot move' IGNORE 'keeps out cold air' NOT ACCEPT 'stops sweating'	4
(b)	Mark is for the reason and must match yes / no statement Any ONE of - <u>Yes / right</u> (Al / foil / heat) reflects; Al is a poor absorber/emitter (of radiation); <u>No / wrong</u> (Al / foil) is a (good) conductor / bad insulator;	 IGNORE shiny ACCEPT answers that refer to the blanket if they imply a relevant point, e.g. 'no, because the blanket would conduct away less heat'	1

Total 5 Marks

Question number	Answer	Notes	Marks
8 (a)	A (background radiation)		1
(b)	Any TWO of 1. Range / penetration of alpha radiation is low; 2. Radon (is a gas so) particles /atoms mobile OR americium (solid so) particles / atoms stay in place; 3. Radon can be inhaled / damage internal tissue OR radiation from americium stays within smoke detector / absorbed by the plastic;	WTTE throughout this part ACCEPT 'cannot penetrate skin' / 'travel a few cm in air' ACCEPT 'all around us', 'more likely to come into contact', ACCEPT 'contained', 'stays in detector' ACCEPT 'can be breathed in', 'can get inside body', 'can damage (internal) cells /organs' ACCEPT 'high up', 'far from people'	2
(c) (i)	A (86)		1
(ii)	B (134)		1
(d) (i)	Bq / becquerel(s);	ACCEPT approximate / phonetic spellings of becquerel / Becquerel / bekerel REJECT B, BQ, bQ, bq	1

Question number	Answer	Notes	Marks
14 (a)	Substitution into correct equation; Calculation; e.g. 10 000 x 10 = p_2 x 270 p_2 = 370 (kPa)	correct answer = 2 marks ACCEPT 370.37….. (kPa)	2
(b)	pressure decreases; Any two from: molecules slow down; less frequent collisions with walls / don't collide as much with walls; less hard /less force (on same area);	 ACCEPT less kinetic energy / less momentum IGNORE collisions with each other ACCEPT smaller momentum change (in collisions)	3
(c) (i)	Pressure decreases; One of Fewer molecules (bombarding container); Less force from the molecules;		2
(ii)	Gas leaves (the liquid)/Expands/Foams the cream;	ACCEPT Cools;	1

Total 8 Marks