Mark Scheme (Results)

January 2021

Pearson Edexcel International GCSE In Physics (4PH1) Paper 2PR

Question number	Answer	Notes	Marks
1 (a) (i)	B – QR; A is not correct as the substance is a solid C is not correct as the substance is a liquid D is not correct as the substance is boiling		1
(ii)	A – PQ; B is not correct as the substance is part solid, part liquid C is not correct as the substance is a liquid D is not correct as the substance is boiling		1
(iii)	any **irregular**, spaced out collection of particles;		1
(iv)	D – they move quickly and randomly; A is not correct as this is how particles in a solid move B is not correct as only particles at 0 K can theoretically be stationary C is not correct as this is how particles in a liquid move		1
(b) (i)	thermometer;	allow temperature sensor, temperature probe	1
(ii)	80 (°C);		1
(c)	temperature difference = 27 (°C); substitution; evaluation; e.g. $\Delta T = 37 - 10 = 27$ (°C) energy = $1.2 \times 840 \times 27$ (energy =) 27 000 (J)	 allow ECF from incorrect temperature difference 37296, 10080 = 2 marks allow 27216, 27220, 27200	3

(Total for Question 1 = 8 marks)

Question number	Answer	Notes	Marks
3 (a)	(to the) left; (because) repulsion (due to like magnetic poles);	allow towards A, away from B ignore backwards reject if mention of charge	2
(b) (i)	0.045 (kg m/s);	allow 'the same'	1
(ii)	momentum of B after collision = 0.045 – (-0.021); evaluation; e.g. 0.045 - −0.021 (momentum =) 0.066 (kg m/s)	 allow 0.024 for 1 mark allow 0.045 + 0.021	2
(iii)	substitution into F = change in momentum / time taken; evaluation; e.g. F = 0.066 / 0.19 (F =) 0.35 (N)	allow ECF from (ii) use of 0.024 from (ii) gives 0.126... (N) allow 0.347... (N)	2
(iv)	(to the) right;	allow towards B, away from A	1

(Total for Question 3 = 8 marks)

(Total for Question 4 = 11 marks)