Pearson Edexcel

Examiners' Report

Principal Examiner Feedback

November 2020

Pearson Edexcel GCSE

In Physics (1PH0) Paper 1H

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Question 1

Most candidates were able to give two uses of radioactive substances and correctly label the control rods and moderator in a reactor. The part played by neutrons in a chain reaction was well understood.

Question 2

(a) Although most provided clear, correct responses to this question, there was still significant confusion about the language of energy transfers.

(b) Few scored full marks and actually measured an average speed at best, but many scored 3 of the 4 marks available.

(c) and (d) Most were able to state which other measurements must be taken, with a pleasing number showing that they had used the GPE and KE equations to inform their answers to (c) and (d).

Question 3

Many were able to recall and use the equation for acceleration. Calculating the distance travelled from a velocity – time graph was not so well done. Few were able to sketch the graph showing reducing acceleration.

Question 4

Manipulating numbers in standard form caused problems for many but most were able to interpret the complex graph, with its temperature axis going in the 'wrong' direction.

As usual, there was confusion between fusion and fission in (c) but many scored well in (d) by describing the nature of a nebula, mentioning gravity and its effect appropriately.

Question 5

(a) Many were able to recall and rearrange $v = f \times \lambda$. The main sources of error involved powers of 10 and the length of the aerial was $\lambda/2$.

Most were able to gain one of the marks available in their description of how to measure the angle of refraction in (b) and 2 marks in part (c) relating refraction to change in wave speed.

Question 6

(a)(i) Most were successful in this calculation of percentage difference, the most common error being to make 240 the denominator. This gained 1 of the 2 marks available.

(a)(ii) and (iii) References to variation of reaction times were unexpectedly low with as many talking about differences in distances in (ii) and in (iii) a surprisingly large number failed to give an increase to distance travelled, preferring to repeat (and average) as a possible improvement to the method.

Question 7

(c) In general, this was well done and clear working allowed intermediate marks to be awarded where the final answer was not correct.

(e) Part (i) involved interpreting an unfamiliar graph. Many (but not most) were able to do this successfully. A similar number were able to attribute the scatter in the graph points to the random nature of radioactivity.

Question 8

(a) Most managed to draw a tangent as requested but only a few went on to calculate the gradient accurately.

(c) Some very good responses but many were restricted to level 2 because they considered only one side of the debate about nuclear power stations or gave limited linkages between ideas.

Question 9

(b) Candidates were asked to consider three aspects: how to measure force; explaining how adding the spring affects the force in the collision; and precautions for accuracy. To score at level 3, all three aspects needed to be addressed to some extent. The most common omissions involved the idea of a relationship between time of collision and the size of the force involved since the momentum change is the same.

(c) Some good responses but many failed to show the linkages between equating forces during collision (Newton's 3rd law) and rearranging to show that it leads to a statement of momentum conservation.

Question 10

(d) Most made a reasonable attempt at this, showing little time pressure to finish the paper. Apart from the confusion between the properties of longitudinal and transverse (often described as P and S), relating these to solids and liquids and refraction due to density changes was sometimes incomplete or confused.