O-Level Physics

Paper 2

Unsolved Topical

Past Papers With Marking Scheme
According to New Syllabus (2023-2025)

2014-2021

Title O-LEVEL Physics Paper 2

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PREFACE

Excellence in learning cannot be claimed without application of concepts in a dexterous way. In this regard one of the logical approach is to start in chunks; like chapter wise learning and applying the concept on exam based questions.

This booklet provides an opportunity to candidates to practice topic wise questions from previous years to the latest. Extensive working of Team MS Books has tried to take this booklet to perfection by collaborating with top of the line teachers.

We have added answer key / marks scheme at the end of each topic for the candidate to compare the his/her answer to the best.

MS Books strives to maintain actual spacing between consecutive questions and within options as per CAIE format which gives students a more realistic feel of attempting question.

Review, feedback and contribution in this booklet by various competent teachers of a subject belonging to renowned school chains make it most valuable resource and tool for both teachers and students.
With all belief in strength of this resource material I can confidently claim that it is worth in achieving brilliance.

Our sincere thanks and gratification to **Mr. Mirza Irshad Baig** who took out special time to help compile and manage this booklet. We would also like to appreciate physics faculty for reviewing and indorsing it.

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PAPER 2

CONTENT TABLE

Physical Quantities and Measurement

Q3/21/M/J/16

1 Fig. 3.1 shows a thin sheet of plastic. A student tries to measure the thickness of the sheet with a ruler, but the sheet is too thin to measure accurately.

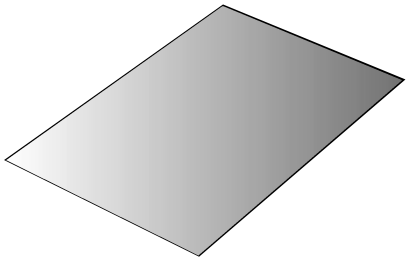

Fig. 3.1 (not to scale)

The student measures the mass of the sheet and obtains the value 0.12 g.

(a) (i) State what is meant by *mass*.

.....

.....[1]

(ii) The student is told that the density of the plastic is 0.91 g/cm^3.

Calculate the volume of the plastic sheet.

volume = ...[2]

(iii) The student measures the length and width of the sheet. The readings obtained are:

length of sheet = 3.0 cm
width of sheet = 2.0 cm

Calculate the thickness of the sheet.

thickness = ... [2]

(b) State a measuring instrument that can be used to measure the thickness of the sheet accurately.

.....[1]

Q2/22/M/J/17

2 A swing is made by tying rope loosely to the branch of a tree, as shown in Fig. 2.1.

A child swings backwards and forwards several times, starting at the highest point A.

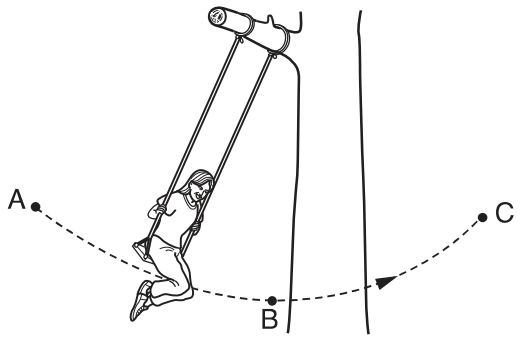

Fig. 2.1

(a) Explain how another child can obtain an accurate measurement of the time for one complete swing.

.....

.....

.....

.....

.....[2]

(b) When the child moves from A to B, she falls a vertical distance of 0.60 m. She loses 240 J of gravitational potential energy. The gravitational field strength g is 10 N/kg.

(i) Calculate the mass of the child.

mass = ...[2]

(ii) Suggest two reasons why her kinetic energy at B is not equal to 240 J.

1. .....

.....

2. .....

.....

[2]

Q3/21/M/J/16

1	(a)	(i)	amount of matter / substance / materia **or** the ability of an object to resist a change in its state of motion (when a force is applied)	B1
		(ii)	(V=) M / D in any form numerical or algebraic	C1
			$0.13(19)\,cm^3$	A1
		(iii)	V / ($l \times$ w) in any form numerical or algebraic	C1
			0.022 cm	A1
	(b)		micrometer (screw gauge) **or calipers**	B1

Q2/22/M/J/17

2	Answer	Marks
2(a)	use of stopwatch or electronic timer	B1
	time at least 5 swings **and** divide by number of swings **or** use of fiducial mark **or** definition of one swing clear e.g. A to C to A or from A and back to A	B1
2(b)(i)	(m=) P.E. / gh **or** 240 / 10 × 0.6	C1
	40 kg	A1
2(b)(ii)	air resistance **or** friction (with air or rope and tree)	B1
	heat produced / work done (in / against air or friction) **or** effect of wind **or** work done by arms / legs	B1