

## ERRATA

in OUP NCPQ Unit 1&2 “Student Workbook” ISBN 9780190320362

– from Richard Walding 14 July 2021

### ERRATA IN THE CHAPTERS

#### Chapter 1 Exam Excellence page 13

Q1. Should read “Predict how the *ends of* the bar..”

#### Experiment Explorer 4 page 26.

Spelling should be “Evaluating”

#### Exam Excellence 4 page 28

Q5. The subscripts are wrong. The subscripts should all be  $10^{-12}$  not 10-12.

#### Exam Excellence 9 page 54

Q5. Note error in question. Refers to data in Q3 on page 54 (not Q4).

#### Exam Excellence 11 page 77

Q9. Delete the words “50 cm” from the question as it is wrong.

#### Exam Excellence 12 page 81

Q7. The question needs correcting. Add “The mass of the ball is 1.0 kg.”

#### Exam excellence 15 page 98

Q1. The question is wrong. Change the options to: (A) 58.2 Hz, (B) 233 Hz, (C) 350 Hz, (D) 466 Hz.

[Answer is (C) 350 Hz].

#### Exam excellence 16 page 103

Q3. Wording should be corrected to read: Determine which statement describes what happens when light travels from an *optically* less dense medium into an *optically* denser medium.

#### Unit 2 Data Test page 106

Item 3 (Dataset 1) page 106

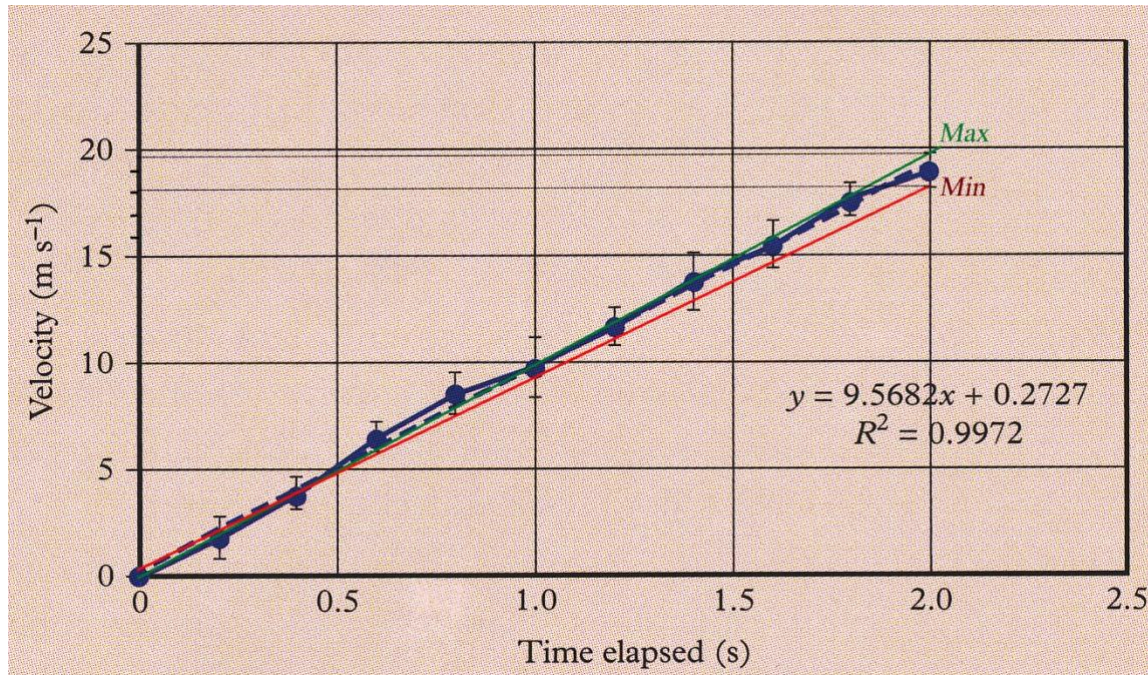
There is a mistake in the question. It should read: “Identify the relationship between the length, L, and the period squared,  $T^2$ , of the pendulum.”

## ERRATA IN THE SOLUTIONS

Chapter 0 solutions page 168

Data Drill 0.2

(a) Change the graph to this



$$\text{max gradient} = \frac{20.0 - 0}{2.0 - 0} = 10.0$$

$$\text{min gradient} = \frac{18.0 - 0}{2.0 - 0} = 9.0$$

$$\delta x = \frac{\text{max} - \text{min}}{2} = \frac{10.0 - 9.0}{2} = 0.5$$

$$\delta\% = \frac{\delta x}{x} \times 100 = \frac{0.5}{9.568} = 5.2\%$$

(b)

$$m = 9.6 \pm 0.5 \text{ m s}^{-1}$$

or

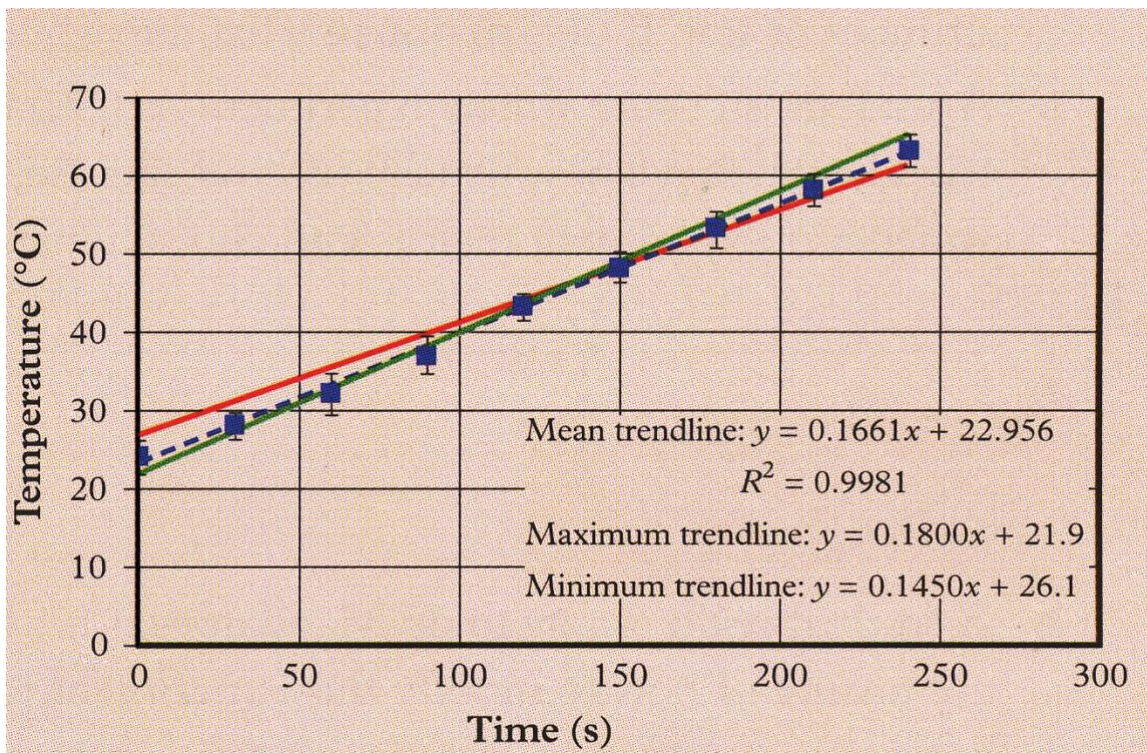
$$m = 9.6 \text{ m s}^{-1} \pm 5.2\%$$

$$v = (9.6 \pm 0.5)t + 0.3 \text{ (to 1 d.p.)}$$

Chapter 1 Data Drill page 11

Interpret Figure 1 like this:





### Chapter 1 Data Drill answers page 169

Q1 Change to

(a)

The relationship is linear but not direct proportion:  $T = 0.1661t + 22.956 \text{ } ^\circ\text{C}$

(b)

$$\delta_{\text{gradient}} = \pm \frac{\text{max} - \text{min}}{2} = \pm \frac{0.1800 - 0.1450}{2} = \pm 0.0175 \text{ } ^\circ\text{C s}^{-1}$$

The y-intercept is  $22.956 \text{ } ^\circ\text{C}$  (however, the question is really asking for the uncertainty in the y-intercept as well):

$$\delta_{\text{y-intercept}} = \pm \frac{26.19 - 21.9}{2} = \pm 1.6 \text{ } ^\circ\text{C}$$

### Chapter 1 Exam Excellence answers page 169

Q4. Error in answer. Answer is (B)

Q5. Error in answer. Answer is (B)

### Exam Excellence 2 page 169

Q4. Answer is wrong. It is (C)

Q5. Answer in back of book page 169 is wrong. It is (A)

Q7. Answer in back of book page 169 is wrong. Correct answer is as follows:

$$Q = mL_f$$

$$m = \frac{Q}{L_f} = \frac{7.24 \times 10^5}{2.76 \times 10^5} = 2.62 \text{ kg}$$

#### Exam Excellence 4 page 171

Q8. Answer is back of book page 171 is wrong.

Mass of constituent particles is mass of 12 protons + 11 neutrons + 12 electrons:

$$m_{cp} = (12 \times 1.007276) + (11 \times 1.008665) + (12 \times 0.000549) \\ = 23.189215 u$$

$$\Delta m = m_{cp} - m_{nuclide} \\ = 23.189215 - 22.994124 = 0.195091 u$$

$$BE = \Delta m \times 931.5 \text{ MeV} = 181.72 \text{ MeV}$$

$$BE = \frac{181.72}{23} = 7.90 \text{ MeV / nucleon}$$

#### Exam Excellence 5 page 171

Q6. Should also mention that beta negative decay also produces an electron antineutrino, whereas beta positive decay also produces an electron neutrino.

#### Data Drill 10 page 178

Q1(b). The answer in the book is wrong. The correct solution is:

$$v_{av} = \frac{14.1 + 13.41 + 13.6}{3} = 13.7 \text{ m s}^{-1}$$

$$\delta x = \frac{\text{max} - \text{min}}{2} = \frac{14.1 - 13.41}{2} = 0.36 \text{ m s}^{-1}$$

$$\delta\% = \frac{\delta x}{x} \times 100 = \frac{0.36}{13.7} \times 100 \\ = 2.6\%$$

#### Exam Excellence 10 page 178

Q4. There is no correct option. The answer in the book is wrong. The correct answer 3.6 s.

#### Exam Excellence 11 page 179

Q4. The answer is incorrect. Answer is (D).

Q5. The answer is incorrect. Answer is (B).

#### Exam Excellence 13 page 181

(b) Answer in back is wrong. It is not 0.608 m. Change to 118.6 m.

**Exam excellence 16 page 184**

Q6(c)

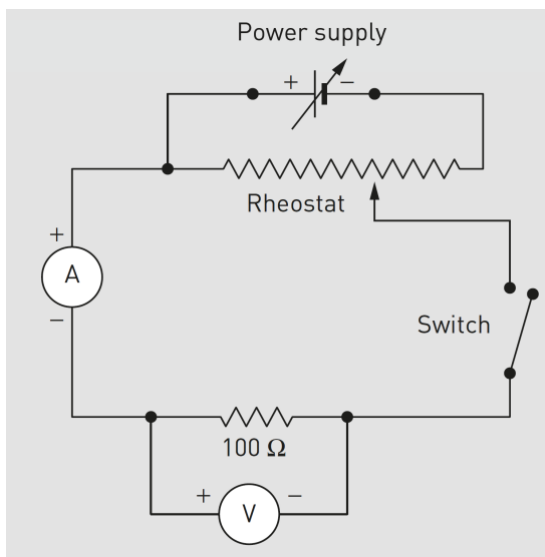
The answer in the back of the book page 184 is incorrect. Change to “It will not catch fire.”

**Item 10 (Dataset 3) answers page 185.**

Change the answer “E% = 6.52%” to “6.4%”.

**Mandatory practical 8.1 page 136.**

The diagram in the Student Workbook is incorrect. It is for the non-ohmic resistor (diode). The circuit diagram should be as per the textbook page 480 (below):



**Mandatory practical 10.1 page 148.**

In Table 2, the heading “Time squared” should have the symbol  $t^2$ .

**Mandatory practical 16.1 page 165.**

Discussion question 1. Line 3. The text should read “(or 1.5/57.1 rad)”.