FREE REVISION PACK

Resistance & I–V Characteristics

Pearson Edexcel International Advanced Level Physics · Unit 2 (WPH12) · Specification points 66, 70

Easy | Multiple choice · past-paper questions

5	5	≈ 10 min
QUESTIONS	TOTAL MARKS	SUGGESTED TIME*

Contents

Q	LEVEL	FOCUS	SOURCE	MARKS
1	Easy	Identifying a straight-line I–V graph	Edexcel IAL January 2023 · Unit 2 · Q1	1 mark
2	Easy	Identifying a filament bulb from its I–V graph	Edexcel IAL October 2025 · Unit 2 · Q1	1 mark
3	Easy	Heating a metal wire	Edexcel IAL October 2024 · Unit 2 · Q5	1 mark
4	Easy	Why a cooling filament's resistance changes	Edexcel IAL June 2023 · Unit 2 · Q10	1 mark
5	Easy	Reading a diode's I–V graph	Edexcel IAL October 2023 · Unit 2 · Q2	1 mark

Key ideas to have ready

- R = V/I. An ohmic conductor gives a straight I–V line through the origin.
- Filament lamp: I–V curve flattens as it heats, because its resistance increases.
- Diode: conducts in one direction above about 0.6–0.7 V; very high resistance in reverse.
- In metals, heating increases lattice vibrations, so resistance rises.

How to use this pack

1. The questions are grouped into levels (Easy). Work through them in order, and check your answers at the end of each level before moving on.
2. Every question is multiple choice with one correct answer. Write down your working anyway; that is how you find mistakes.
3. The separate mark scheme uses the same numbers and explains every answer.

Levels are based on how students did in Pearson's examiner reports where that information exists, plus our own difficulty rating. *About 1.5 minutes per question.

Questions are reproduced from Pearson Edexcel International Advanced Level past papers; Pearson Edexcel material is © Pearson Education Ltd. Question numbers have been changed to suit this pack. Get Better At Physics is an independent tutor and is not affiliated with or endorsed by Pearson. Free for personal revision and classroom use.

Easy

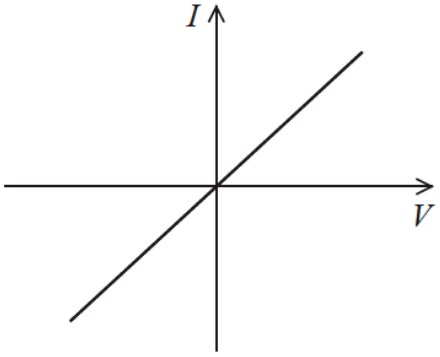
Definitions and one-step ideas. Most students get these right.

Questions 1–5

Choose **one** answer for each question and put a cross in the box next to it.

Edexcel IAL January 2023 · Unit 2 · Q1

1 The graph shows how current I varies with potential difference V for an electrical component.

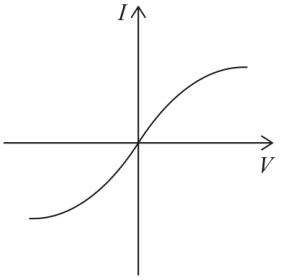


Which component is represented by the graph?

- ☒ **A** diode
- ☒ **B** filament lamp
- ☒ **C** resistor at constant temperature
- ☒ **D** thermistor

Edexcel IAL October 2025 · Unit 2 · Q1

2 The graph shows how current I varies with potential difference V for an electrical component.



Which of the following components would give this graph?

- ☒ **A** diode
- ☒ **B** filament bulb
- ☒ **C** resistor
- ☒ **D** thermistor

Edexcel IAL October 2024 · Unit 2 · Q5

3 A current in a wire causes the temperature of the wire to increase.

Which row of the table describes the changes to the wire as the temperature increases?

		Amplitude of lattice vibrations in the wire	Resistance of the wire
☒	**A**	decreases	decreases
☒	**B**	increases	decreases
☒	**C**	decreases	increases
☒	**D**	increases	increases

Edexcel IAL June 2023 · Unit 2 · Q10

4 As the temperature of the filament in a bulb decreases, the resistance of the filament changes.

Which of the following is the reason for this change in resistance of the filament?

☒ **A** Lattice vibrations decrease

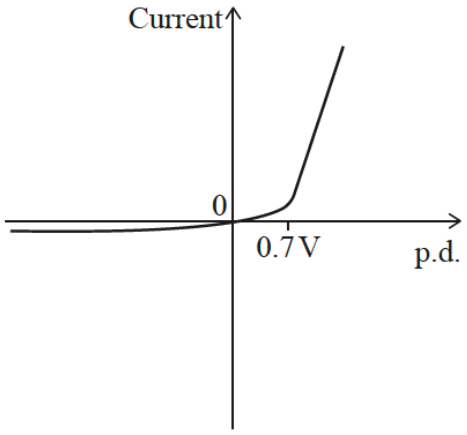
☒ **B** Lattice vibrations increase

☒ **C** Number of conduction electrons decreases

☒ **D** Number of conduction electrons increases

Edexcel IAL October 2023 · Unit 2 · Q2

5 The current-potential difference (p.d.) graph for a diode is shown.



Which of the following statements is correct for this diode?

☒ **A** This diode does not conduct in the reverse direction.

☒ **B** The resistance of this diode in the reverse direction is infinite.

☒ **C** The resistance of this diode decreases when the p.d. is above 0.7 V.

☒ **D** This diode does not conduct when the p.d. is below 0.7 V.

End of questions. Check your answers with the matching mark scheme. More free packs and 1-to-1 tuition: **www.getbetteratphysics.co.uk**