Oxford Cambridge and RSA

GCSE Physics A (Gateway)

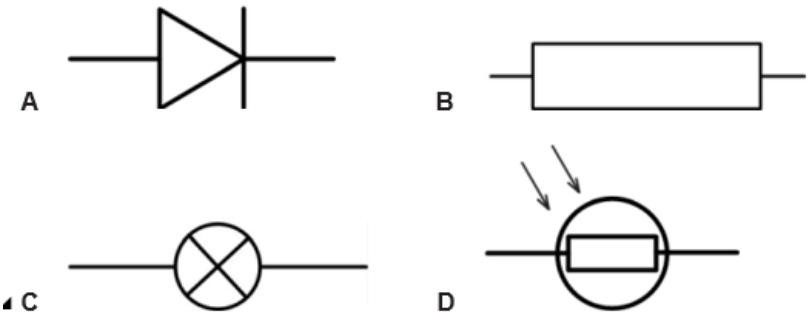
J249/01 Physics A P1-P4 and P9 (Foundation Tier)

Question Set 27

Multiple Choice Questions

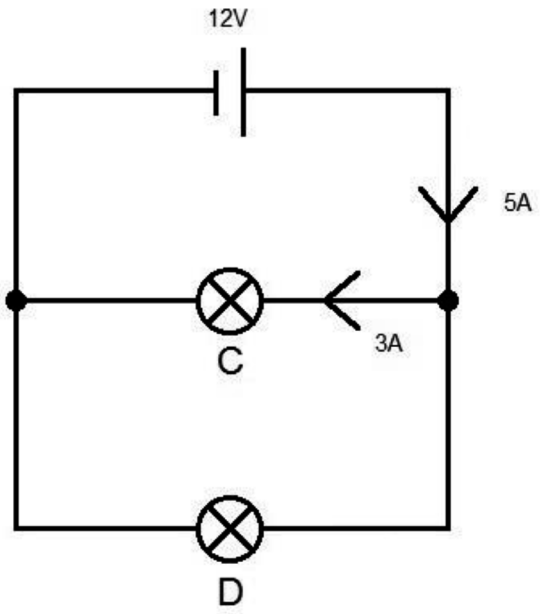
P3: Electricity

1 Which symbol is used to show an LDR?



Your answer ☐ **[1]**

2 Look at the circuit diagram.



resistance = potential difference ÷ current

Calculate the resistance of bulb **D**.

A 2 Ω

B 4 Ω

C 6 Ω

D 8 Ω

Your answer ☐ **[1]**

3 Which voltage is the maximum voltage made when **four** 1.5 V cells are connected in **series**?

A 0 V

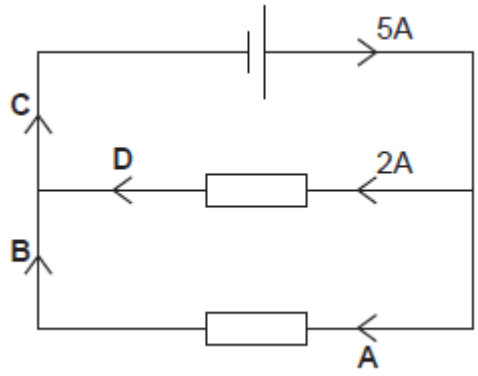
B 1.5 V

C 3.0 V

D 6.0 V

Your answer ☐ **[1]**

4 This is a circuit.

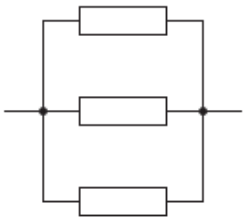


Which letter **A**, **B**, **C** or **D** shows the part of the circuit that carries a current of 2A?

Your answer ☐ **[1]**

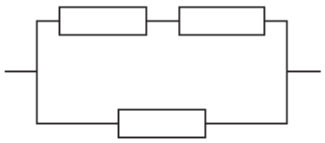
5 A student has 3 identical resistors. She arranges them in four different ways.

A

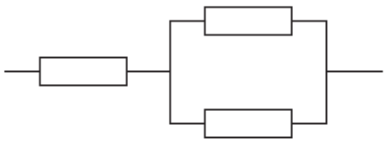


B

C



D



Which arrangement has the **most** resistance?

Your answer ☐ **[1]**

6 Static electricity can be produced when two materials are rubbed together.

Which two types of material could cause static electricity to be produced?

A Two insulators

B Two conductors

C One insulator and one conductor

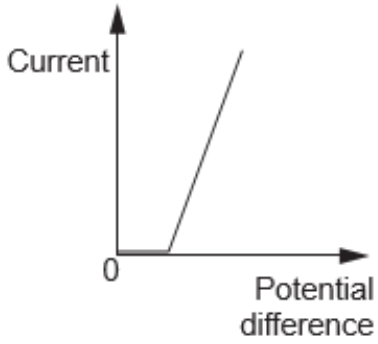
D A metal and a non-metal

Your answer ☐ **[1]**

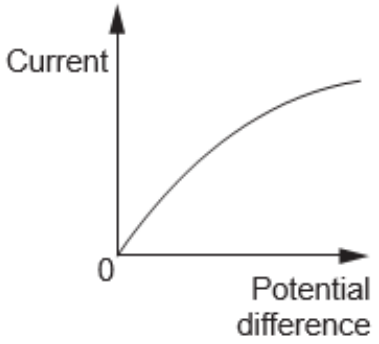
7 A student investigates how current and potential difference vary in different components.

Look at the graphs of her results.

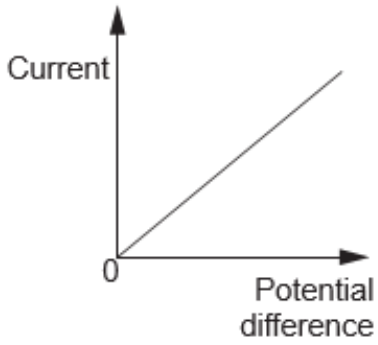
A



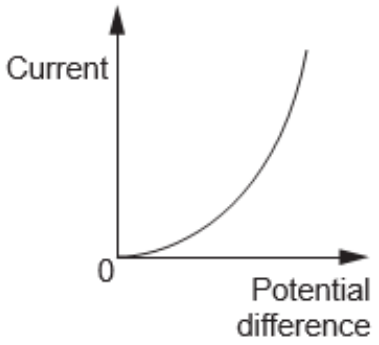
B



C



D



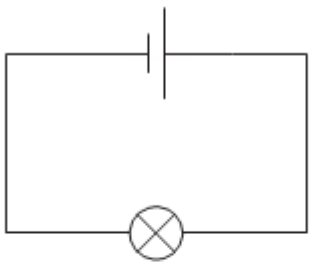
Which graph shows a filament lamp?

Your answer ☐ **[1]**

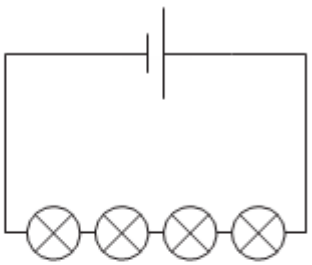
8 A student sets up four different circuits. He uses identical lamps and the same cell.

Look at the diagrams of his circuits.

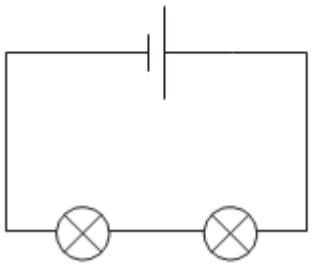
A



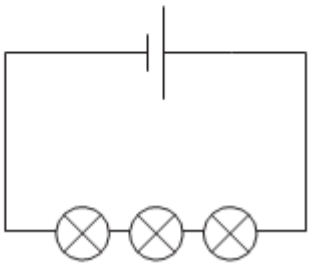
B



C



D



Which circuit has the brightest lamp(s)?

Your answer ☐

[1]

9 What conditions are needed for charge to flow?

A A source of potential difference and two lamps.

B A complete circuit and two lamps.

C A complete circuit and a source of potential difference.

D A complete circuit and a source of resistance.

Your answer ☐ **[1]**

Total Marks for Question Set 27: 9

Equations in physics

$(\text{final velocity})^2 - (\text{initial velocity})^2 = 2 \times \text{acceleration} \times \text{distance}$

change in thermal energy = mass × specific heat capacity × change in temperature

thermal energy for a change in state = mass × specific latent heat

energy transferred in stretching = $0.5 \times \text{spring constant} \times (\text{extension})^2$

potential difference across primary coil × current in primary coil = potential difference across secondary coil × current in secondary coil

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