Oxford Cambridge and RSA

GCSE Physics A (Gateway)

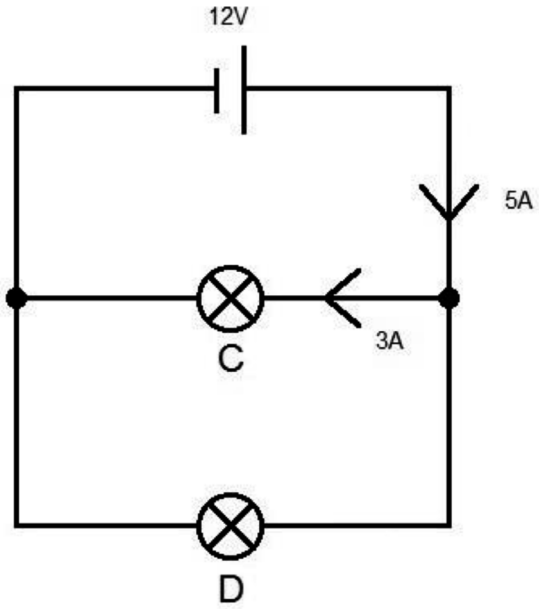
J249/03 Physics A P1-P4 and P9 (Higher Tier)

Question Set 27

Multiple Choice Questions

P3: Electricity

1 Look at the circuit diagram.



resistance = potential difference ÷ current

Calculate the resistance of bulb **D**.

A 2 Ω

B 4 Ω

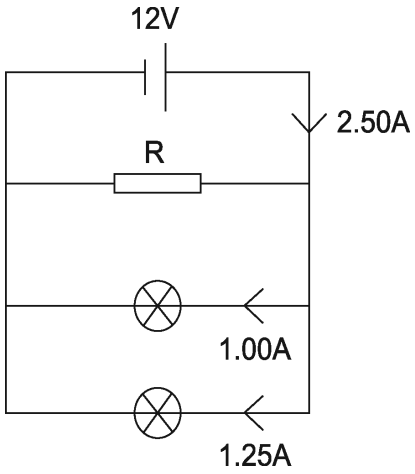
C 6 Ω

D 8 Ω

Your answer ☐

[1]

2



Calculate the power dissipated by resistor **R**.

A 3 W

B 12 W

C 15 W

D 30 W

Your answer ☐

[1]

3

The current in a 12 Ω resistor is 9.0 A.

How much power is dissipated?

A 108 W

B 972 W

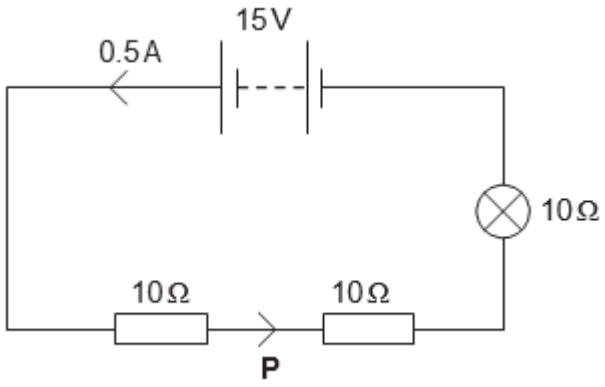
C 1 296 W

D 11 664 W

Your answer ☐

[1]

4 What is the current at point P in the circuit?



A 0.5 A

B 7.5 A

C 15.0 A

D 20.5 A

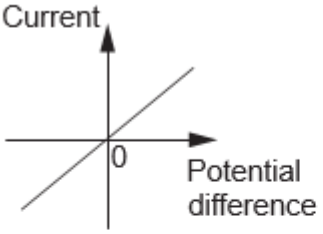
Your answer ☐

[1]

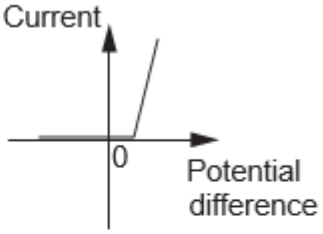
5 A student investigates four different electrical components.

She plots current-potential difference graphs for the components.

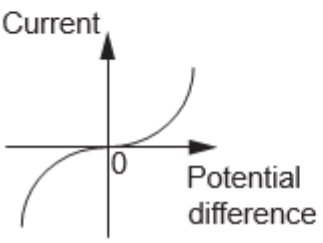
A



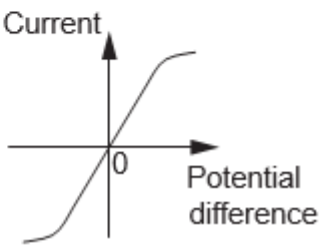
B



C



D

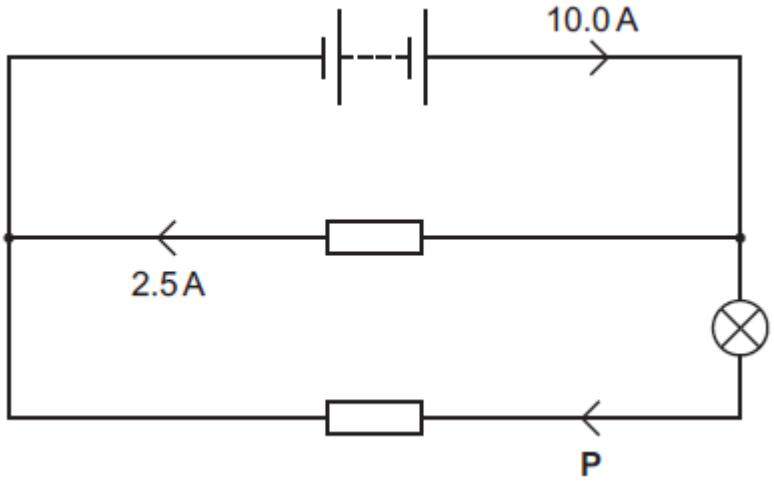


Which of the above shows the characteristic graph for a diode?

Your answer ☐

[1]

6 Look at the circuit diagram.



What is the current at point **P** in the circuit?

A 2.5 A

B 5.0 A

C 7.5 A

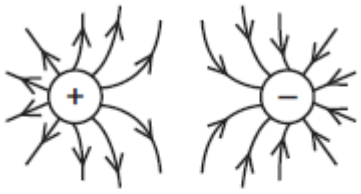
D 10.0 A

Your answer ☐

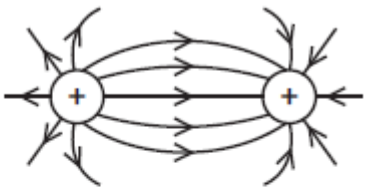
[1]

7 Look at the field line diagrams for positive and negative charges.

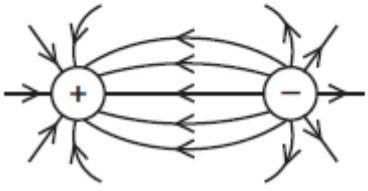
A



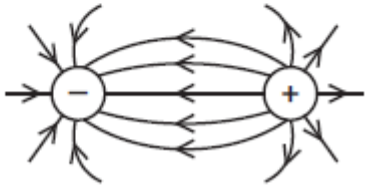
B



C



D



Which field line diagram is correct?

Your answer ☐

[1]

Total Marks for Question Set 27: 7

Equations in physics

(final velocity)^2 – (initial velocity)^2 = 2 × acceleration × 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 × spring constant × (extension)^2

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

Higher tier only –

force on a conductor (at right angles to a magnetic field) carrying a current = magnetic flux density × current × length