

O Level Pure Physics MCQs

Practical Electricity Test 2.0

Q1

A combined bathroom unit of a heater and a lamp is controlled by one switch. The unit contains a 2 kW heater and a 100 W lamp.

In one week, the lamp uses 1 kWh of electrical energy.

How much electrical energy is used by the heater alone?

- A 2.0 kWh
- B 4.0 kWh
- C 10 kWh
- D 20 kWh

Q2

If 1 kWh of electricity cost \$0.20, how much does it cost to switch on a spotlight which is rated at 2 kW for 6 hours?

- A \$ 0.60
- B \$ 2.40
- C \$ 15.00
- D \$ 60.00

Q3

Jonathan connects the switch along the neutral wire of a fan. Which of the following statements is/are correct?

- i The fan will not operate when the switch is closed.
- ii The fan will still operate when the switch is opened.
- iii The fan will still be connected to the high voltage source when the switch is open.

- A iii only
- B i & iii only
- C i & ii only
- D i, ii & iii

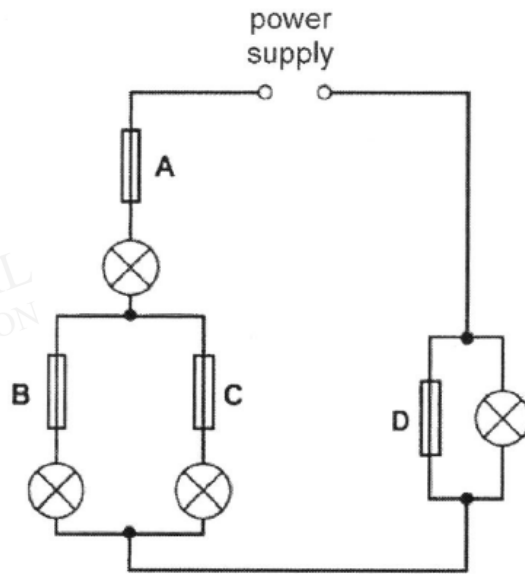
Q4

Why is a fuse used in an electrical appliance?

- A to earth the appliance
- B to protect the user from being electrocuted
- C to protect the appliance from being damaged
- D to control the amount of current flowing through the appliance

Q5

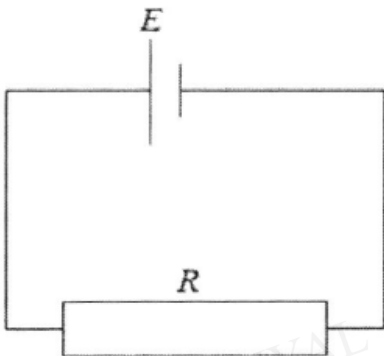
In the circuit shown, only one of the fuses has blown, but none of the lamps is lit.
 Which fuse has blown?



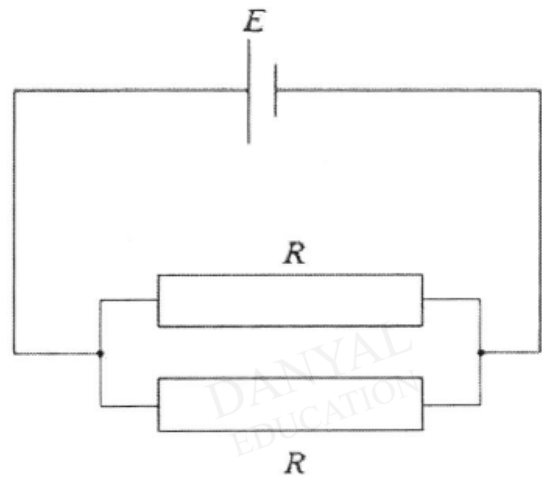
Q6

In the two circuits X and Y below, each cell has an e.m.f. E and negligible internal resistance. Each resistor has a resistance R .

circuit X



circuit Y



The power dissipated in circuit X is P .
 What is the best estimate for the power dissipated in circuit Y?

- A $\frac{P}{4}$
- B $\frac{P}{2}$
- C $2P$
- D $4P$

Q7

The diagram shows the label on an electric iron.

ELECTRIC IRON	
Operating Voltage	240 V
Power	2.8 kW
Fuse Rating	13 A

This iron is used for 12 hours every month.

The cost of 1 kWh of electrical energy is 25 cents.

Which of these statements is true about the electric iron?

- A** The fuse will blow because the fuse rating is too low.
- B** The energy dissipated in the iron every month is 120 kJ.
- C** The iron is 90% efficient.
- D** It costs \$8.40 every month to use the iron.

Q8

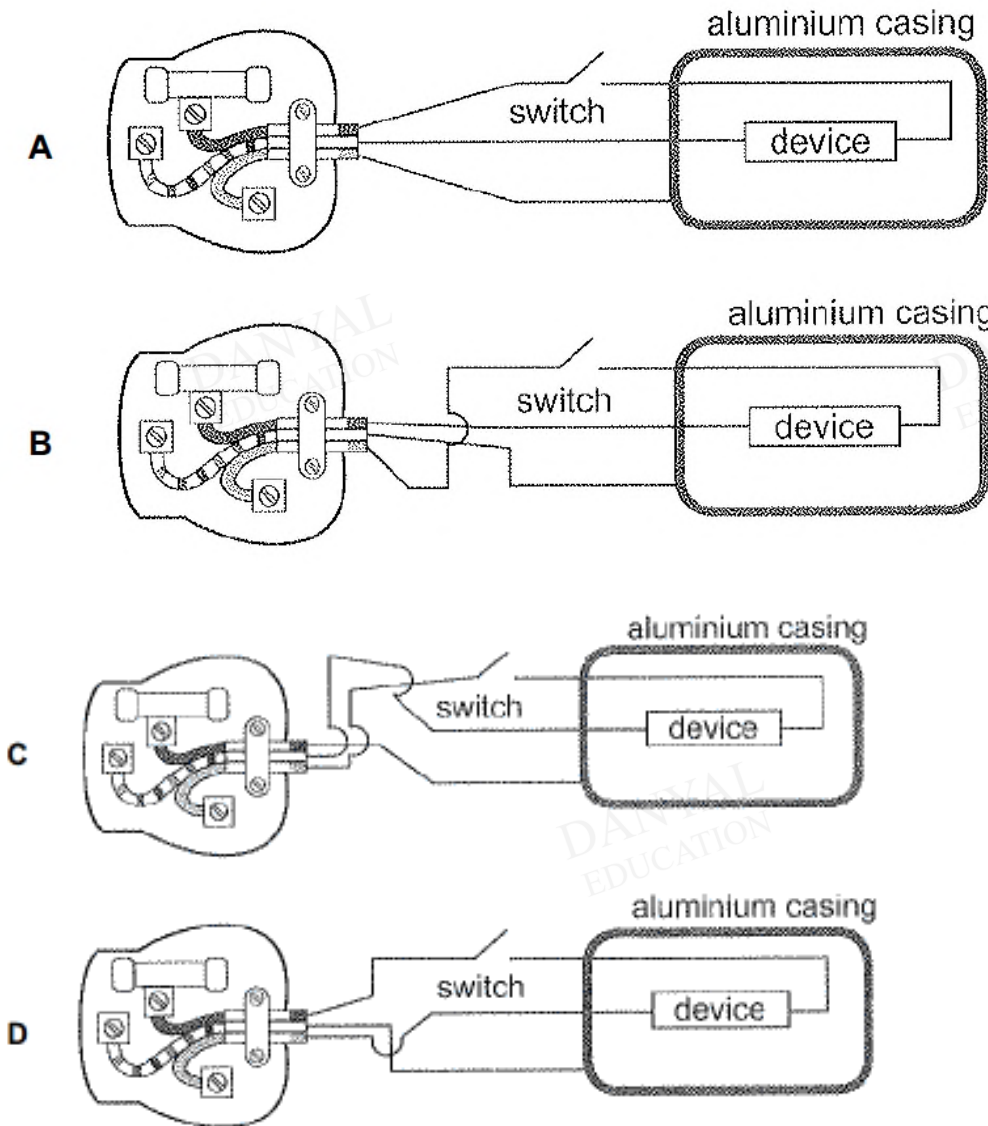
The bulb in a lamp is rated 2 V, 1 W, while the bulb in an oven is rated 220 V, 10 W.

What will happen when both the lamp and oven are connected in series across a 220 V operating supply?

- A** The bulb in the lamp will blow immediately, and no current will flow in the circuit.
- B** The bulb in the lamp will appear to operate normally, while the bulb in the oven will emit a weak light.
- C** The bulb in the lamp will emit very little light, while the bulb in the oven will appear to operate normally.
- D** Both bulbs will operate at normal brightness.

Q9

Which one of the following electrical appliances is correctly wired to a three-pin plug?



Q10

Five electrical appliances are switched on for the given duration. In which appliance is the greatest amount of energy converted?

	appliance	time
A	3 kW water heater	0.5 hr
B	1.5 kW hot-plate	2.0 hr
C	750 W pressing iron	3.0 hr
D	100 W lamp	15 hr

Answers

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Q1 D

Q2 B

Q3 A

Q4 C

Q5 A

Q6 C

Q7 D

Q8 C

Q9 D

Q10 B

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