

Dangers of Electricity

Question Paper 1

Level	IGCSE
Subject	Physics (0625/0972)
Exam Board	Cambridge International Examinations (CIE)
Topic	General Physics
Sub-Topic	Dangers of Electricity
Booklet	Question Paper 1

Time allowed: 11 minutes

Score: /9

Percentage: /100

Grade Boundaries:

9	8	7	6	5	4	3	2	1
>85%	75%	68%	60%	55%	50%	43%	35%	<30%

Question 1

A domestic circuit includes a 30 A fuse. This protects the wiring if there is too much current in the circuit.

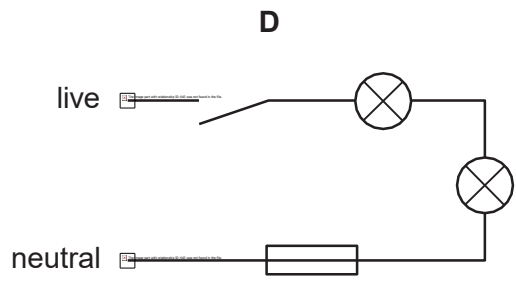
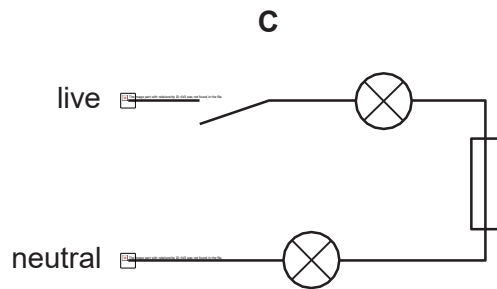
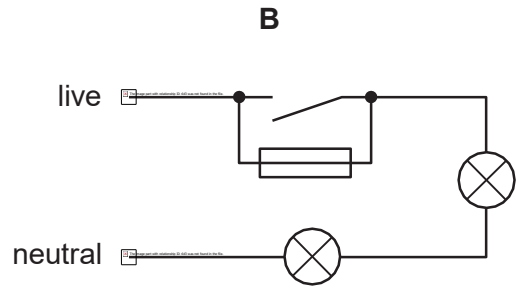
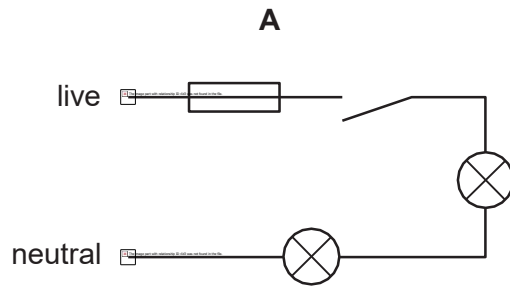
In which wire is the 30 A fuse positioned, and what does it do when it operates?

	position	operation
A	live wire	disconnects the circuit
B	live wire	reduces the current to 30A
C	neutral wire	disconnects the circuit
D	neutral wire	reduces the current to 30A

Question 2

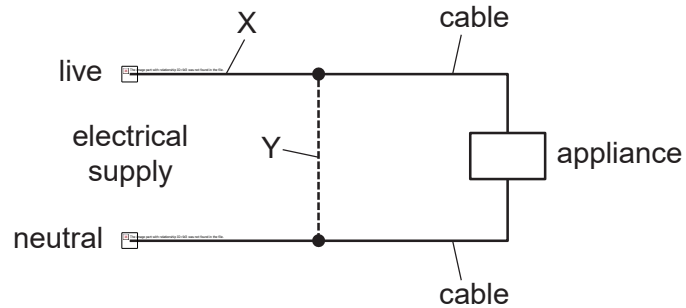
A fuse is used to protect an electric circuit.

Which diagram shows where the fuse should be connected?



Question 3

Either a fuse or a circuit-breaker can be used to protect electrical cables from large currents that could cause overheating.



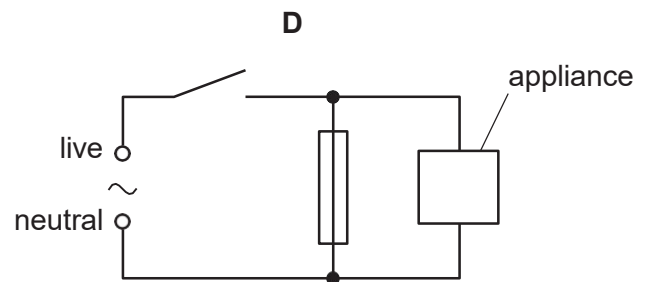
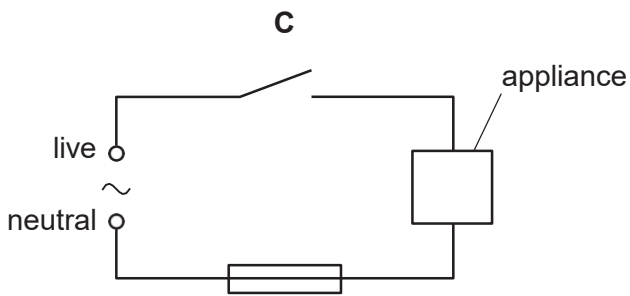
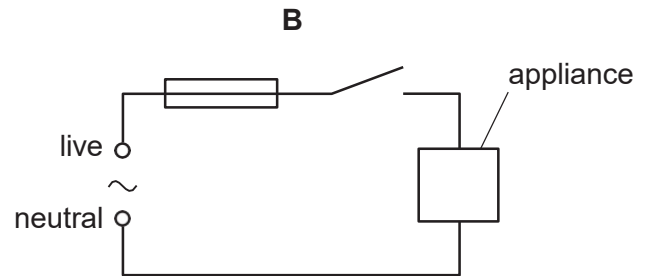
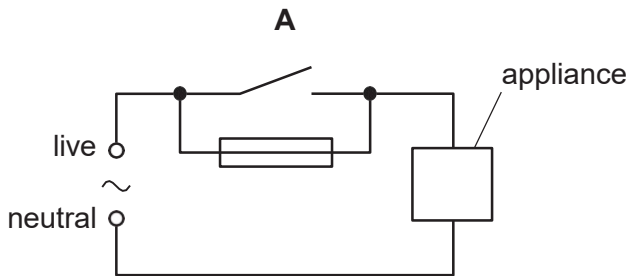
When a fuse is used, where should it be connected, and when a circuit-breaker is used, where should it be connected?

	position of fuse	position of circuit-breaker
A	X	X
B	X	Y
C	Y	X
D	Y	Y

Question 4

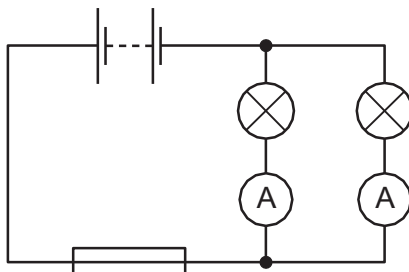
An appliance is connected to a mains supply. Its circuit also contains a switch and a fuse.

Which circuit shows the fuse in the correct position?



Question 5

In the circuit shown, the current from the battery divides equally between the two lamps. Each ammeter reads 6.0A.



What is a suitable rating for the fuse in this circuit?

- A 3.0A B 6.0A C 10.0A D 13.0A

Question 6

The current in a kettle is 10A and it is protected by a 13A fuse.

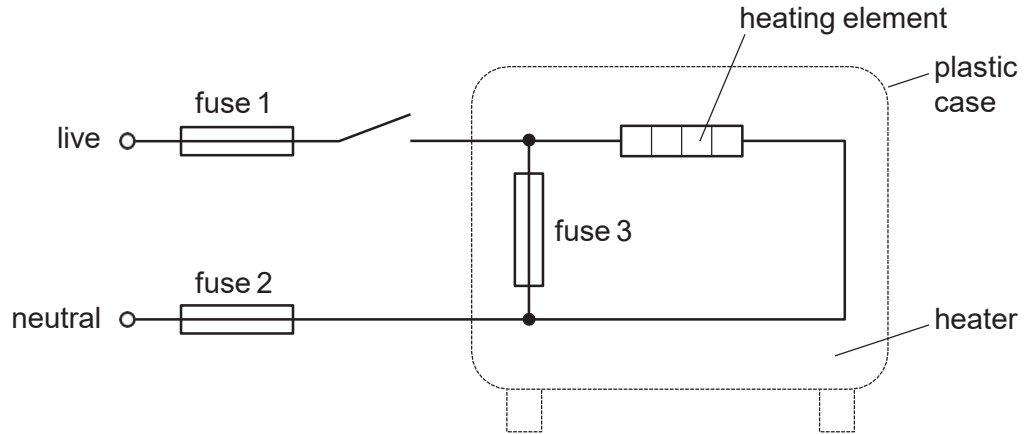
The owner of the kettle replaces the 13A fuse with a 3A fuse.

What happens when the kettle is switched on?

- A. The fuse blows and the kettle is damaged.
- B. The fuse blows and the kettle is undamaged.
- C. The fuse does not blow and the kettle works correctly.
- D. The fuse does not blow but the kettle fails to work.

Question 7

The diagram shows the connections to an electric heater. Three fuses have been added to the circuit.

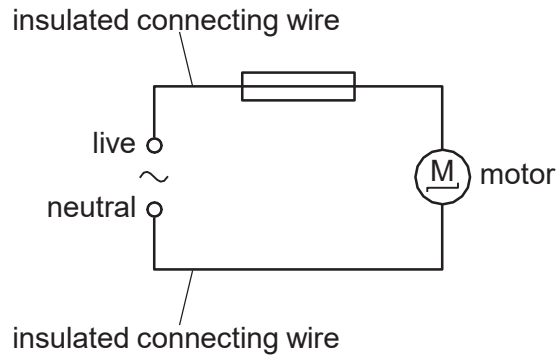


Which of the fuses are correctly placed?

- A. fuse 1, fuse 2 and fuse 3
- B. fuse 1 and fuse 2 only
- C. fuse 1 only
- D. fuse 2 only

Question 8

An electric motor is connected to the mains supply by insulated wires. The circuit is protected by a fuse, but the connecting wires become hot.



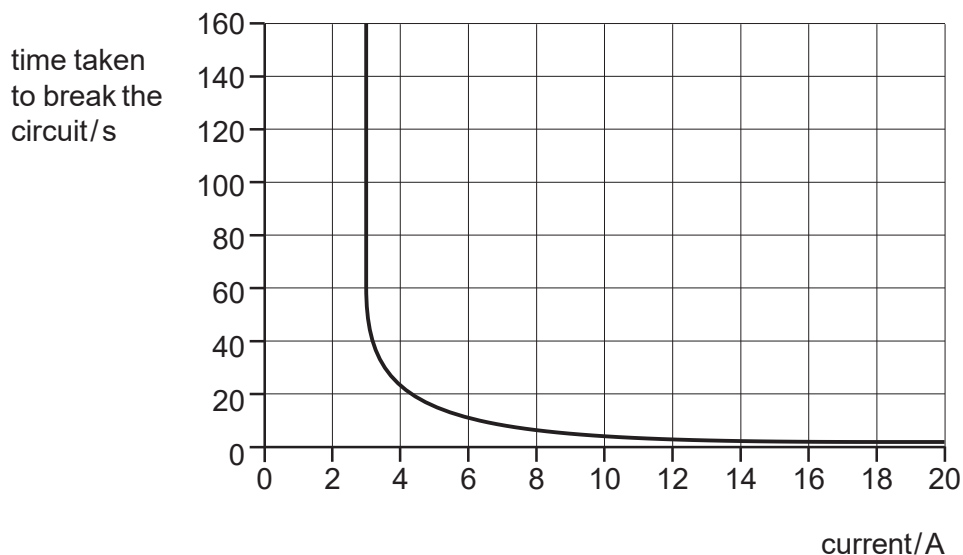
How could the wires be prevented from becoming so hot?

- A. Connect a second fuse in the neutral wire.
- B. Use a fuse with a higher current rating.
- C. Use thicker connecting wires.
- D. Use thicker insulation on the connecting wires.

Question 9

A circuit-breaker is designed to protect a circuit which usually carries a current of 2 A.

The time taken to break the circuit depends on the current, as shown in the graph.



What happens when the current in the circuit is 2 A and what happens when the current 18 A?

	when the current is 2 A	when the current is 18 A
A	the circuit breaks in less than 5 seconds	the circuit breaks in less than 5 seconds
B	the circuit breaks in less than 5 seconds	the circuit does not break
C	the circuit does not break	the circuit breaks in less than 5 seconds
D	the circuit does not break	the circuit does not break