Electric Circuits

Question Paper 2

Level	IGCSE
Subject	Physics (0625/0972)
Exam Board	Cambridge International Examinations (CIE)
Topic	General Physics
Sub-Topic	Electric Circuits
Booklet	Question Paper 2

Time allowed: **19 minutes**

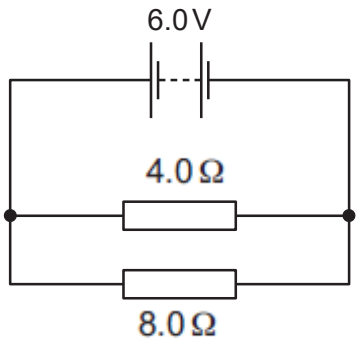
Score: **/15**

Percentage: **/100**

Grade Boundaries:

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

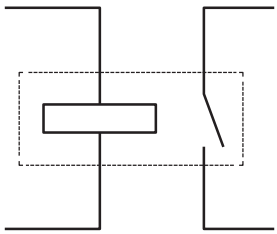
The circuit diagram shows a 4.0 Ω resistor and an 8.0 Ω resistor connected to a 6.0V battery.



What is the current in the 8.0 Ω resistor?

A 0 A B 0.50 A C 0.75A D 1.0A

Which component is represented by this circuit symbol?



A. a bell

B. a fuse

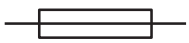
C. a relay

D. a transformer

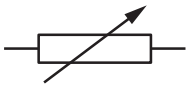
Question 3

What is the circuit symbol for a variable resistor?

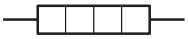
A



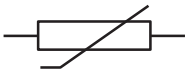
B



C

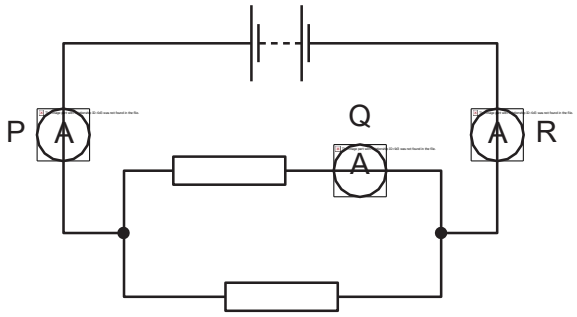


D



Question 4

The diagram shows a circuit containing three ammeters P, Q and R.



Which statement about the readings on the ammeters is correct?

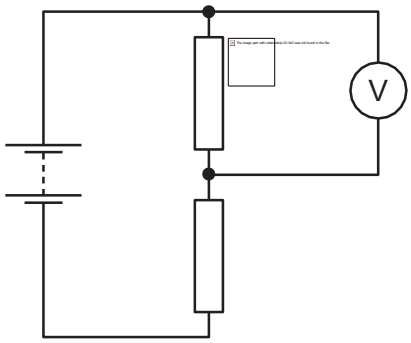
A. The reading on P is equal to the reading on Q.

B. The reading on P is equal to the reading on R.

C. The reading on Q is greater than the reading on P.

D. The reading on Q is greater than the reading on R.

The diagram shows a light-dependent resistor (LDR) connected in a potential divider circuit.



The brightness of the light falling on the LDR is increased.

Which row shows what happens to the resistance of the LDR, and what happens to the reading on the voltmeter?

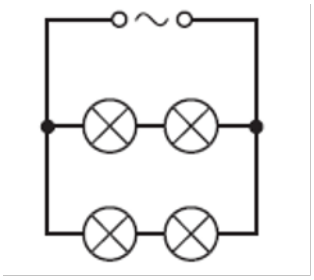
	resistance of LDR	reading on voltmeter
A	decreases	decreases
B	decreases	increases
C	increases	decreases
D	increases	increases

Four lamps are each labelled '60 W 230 V'.

In which circuit are the lamps connected so that they operate at normal brightness?

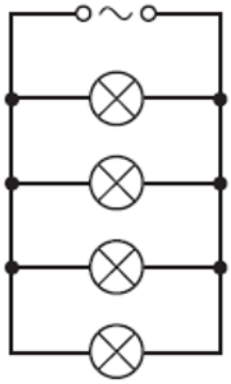
A

230V



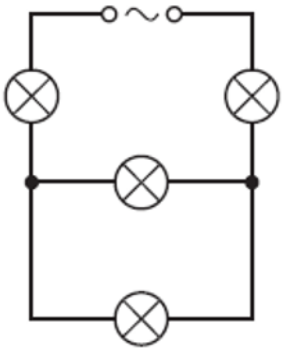
B

230V



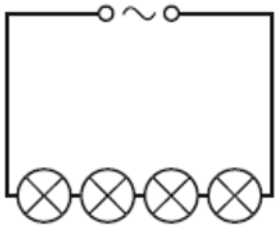
C

230V



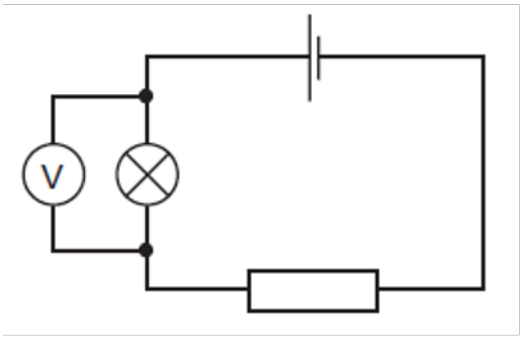
D

230V

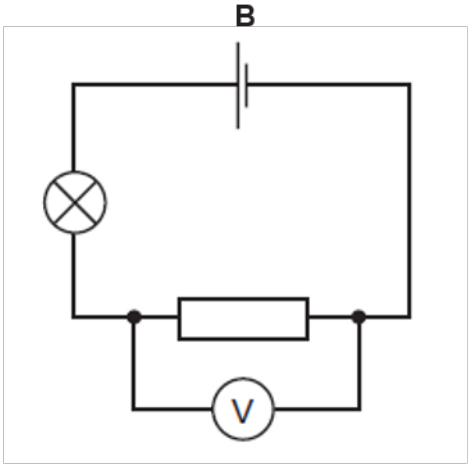


Which circuit shows a voltmeter measuring the p.d. across a resistor?

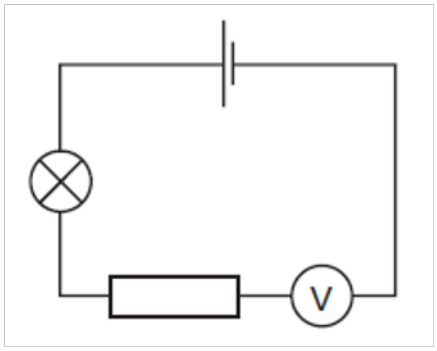
A



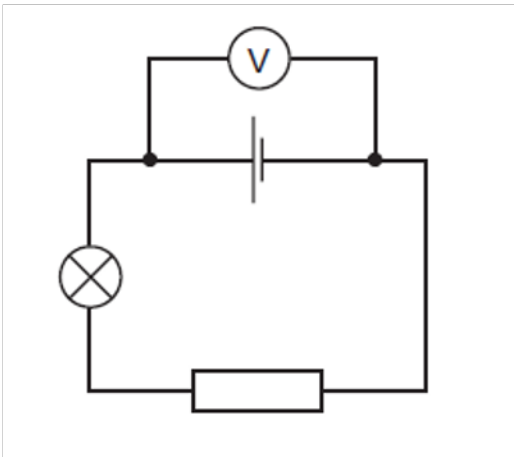
B



C

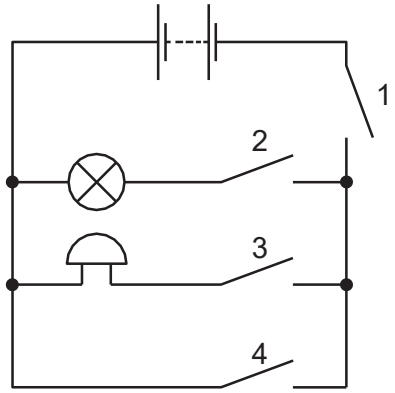


D



Question 8

A student connects the circuit shown.



Which switches must be closed for both the bell to ring and the lamp to light?

A. 1 and 4 only

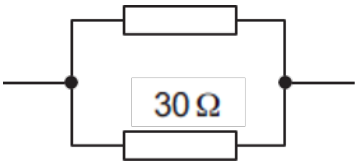
B. 2 and 3 only

C. 1, 2 and 3 only

D 1, 2, 3 and 4

Question 9

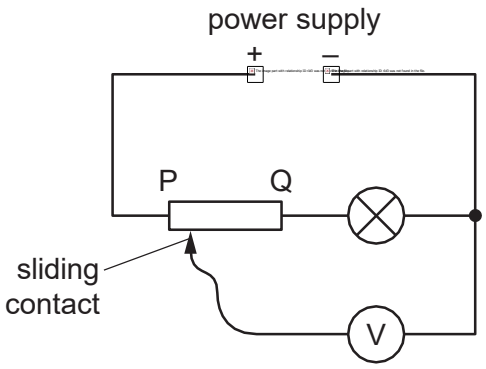
Two resistors are connected in parallel.



Which value could be the resistance of the combination?

A 12 Ω B 20 Ω C 25 Ω D 50 Ω

The circuit contains a variable potential divider PQ, a lamp and a voltmeter.

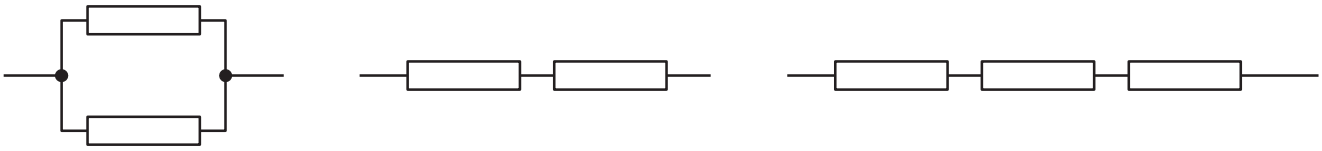


The sliding contact of the potential divider is moved towards end Q.

What happens to the brightness of the lamp and what happens to the voltmeter reading?

	brightness of lamp	voltmeter reading
A	becomes brighter	decreases
B	becomes brighter	increases
C	does not change	decreases
D	does not change	increases

Identical resistors are connected together to form arrangements X, Y and Z.



arrangement X arrangement Y arrangement Z

What is the correct order of the resistances of the arrangements from the largest to the smallest?

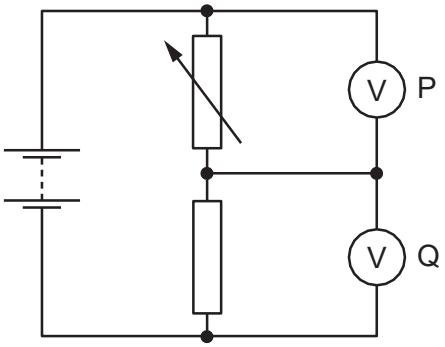
A X → Y → Z

B Y → X → Z

C Z → X → Y

D Z → Y → X

The diagram shows a potential divider circuit.



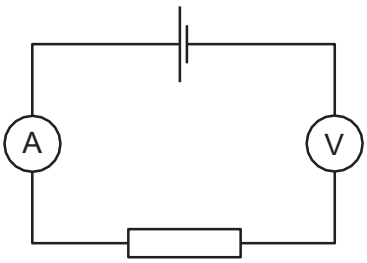
The resistance of the variable resistor is increased.

Which row shows what happens to the readings on voltmeter P and on voltmeter Q?

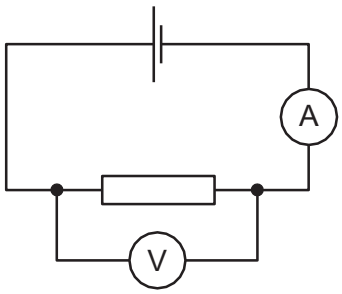
	reading on voltmeter P	reading on voltmeter Q
A	decreases	decreases
B	decreases	increases
C	increases	decreases
D	increases	increases

A student wishes to determine the resistance of a resistor. She uses an ammeter and a voltmeter in a circuit.
In which circuit are the ammeter and voltmeter connected correctly?

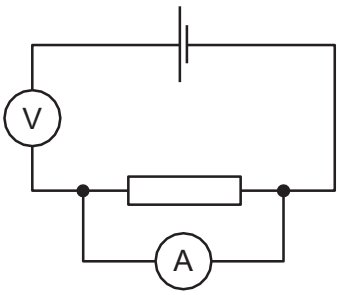
A



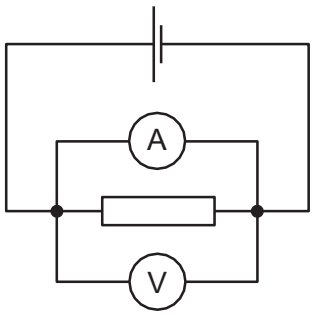
B



C

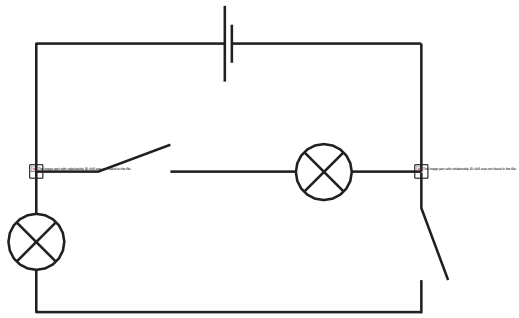


D

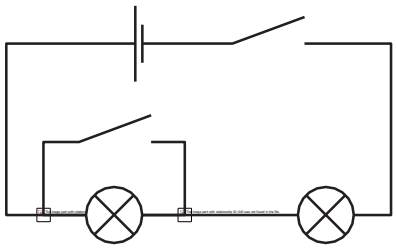


In which circuit can the lamps be switched on and off independently?

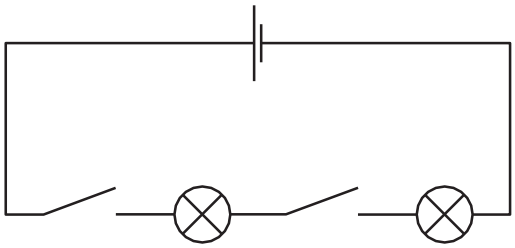
A



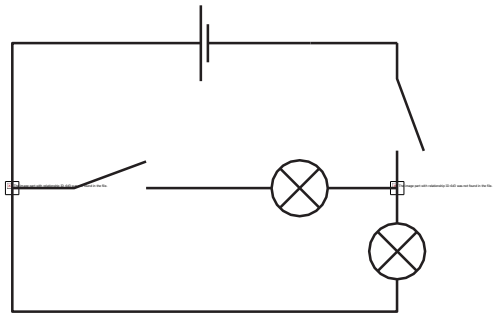
B



C

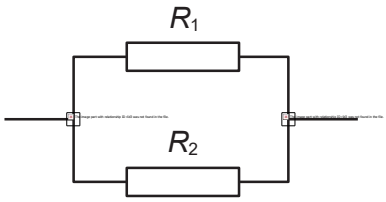


D



Two resistors, with resistances R_1 and R_2, are connected in parallel.

The resistance R_1 is greater than the resistance R_2.



What is the resistance of the parallel combination?

A. less than either R_1 or R_2

B. equal to R_1

C. equal to R_2

D. the average of R_1 and R_2