

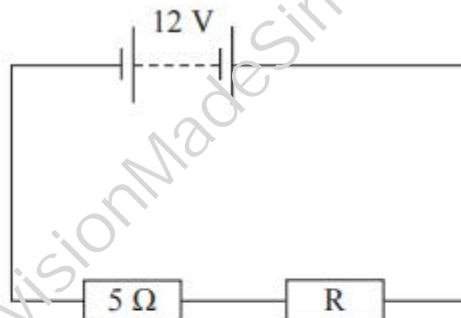
Electrical Circuits MCQ QP1

- 1 A source of e.m.f. with no internal resistance is connected across a negative temperature coefficient thermistor. The current in the thermistor and the potential difference across the thermistor are measured. The temperature of the thermistor is increased.

Which of the following will be observed?

- A a decrease in current
- B a decrease in potential difference
- C an increase in current
- D an increase in potential difference

- 2 The circuit contains a resistor R.

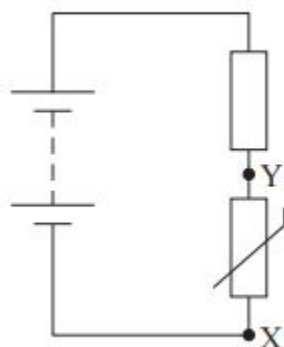


What is the resistance of R if the potential difference across it is 2 V?

- A 0.83 Ω
- B 1.0 Ω
- C 2.0 Ω
- D 2.4 Ω

Refer to the diagram below for Question 3 & 4

The diagram shows a circuit containing a fixed resistor and a negative temperature coefficient thermistor.



- 3 The temperature in the circuit increases.
Which row in the table correctly shows what happens to the current in the thermistor and the potential difference across the thermistor?

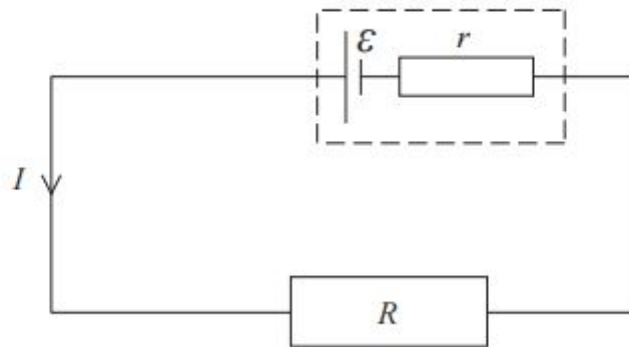
	Current	Potential difference
<input type="checkbox"/> A	decreases	decreases
<input type="checkbox"/> B	decreases	increases
<input type="checkbox"/> C	increases	decreases
<input type="checkbox"/> D	increases	increases

- 4 The potential difference of the supply is 15 V. The resistance of the fixed resistor is $40\ \Omega$ and the resistance of the thermistor is $60\ \Omega$.

What is the potential difference across XY?

- A 1.5 V
 B 4.0 V
 C 6.0 V
 D 9.0 V

- 5 The diagram shows a resistor of resistance R connected to a cell of e.m.f. \mathcal{E} and internal resistance r .



Which of the following correctly shows the potential difference V across the terminals of the cell?

- A $V = \frac{\mathcal{E}(R+r)}{r}$
- B $V = \frac{\mathcal{E}R}{(R+r)}$
- C $V = \frac{\mathcal{E}(R+r)}{R}$
- D $V = \frac{\mathcal{E}r}{(R+r)}$

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