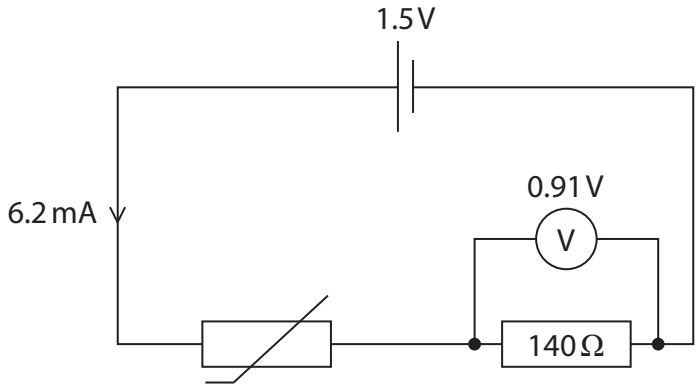
7 A teacher uses this circuit to investigate how the current in a circuit changes with the temperature of a room.



(a) (i) Calculate the voltage across the thermistor.

(2)

voltage = ... V

(ii) State the formula linking voltage, current and resistance.

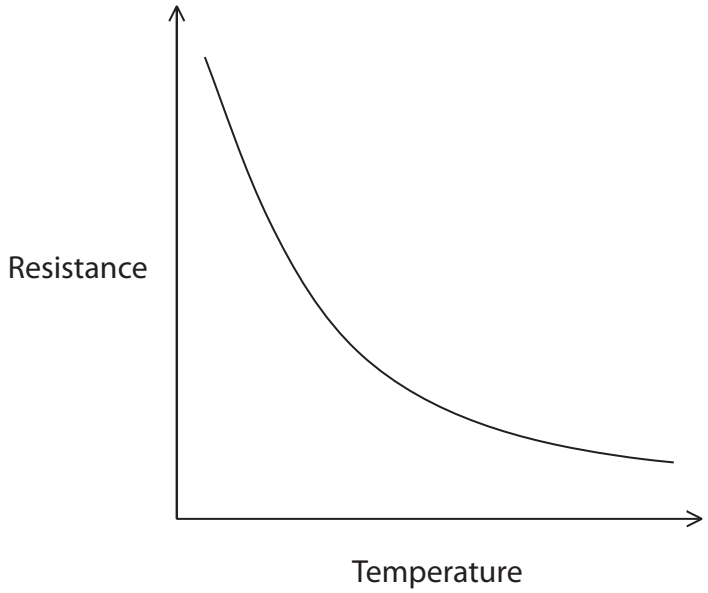
(1)

(iii) Calculate the resistance of the thermistor.

(3)

resistance = ... Ω

(b) The graph shows how the resistance of the thermistor changes with temperature.



(i) Describe the relationship between the temperature and the resistance of the thermistor.

(2)

(ii) Explain how the reading on the voltmeter changes when the temperature of the room decreases.

(3)

(Total for Question 7 = 11 marks)