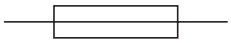
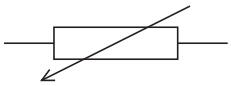
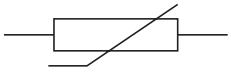
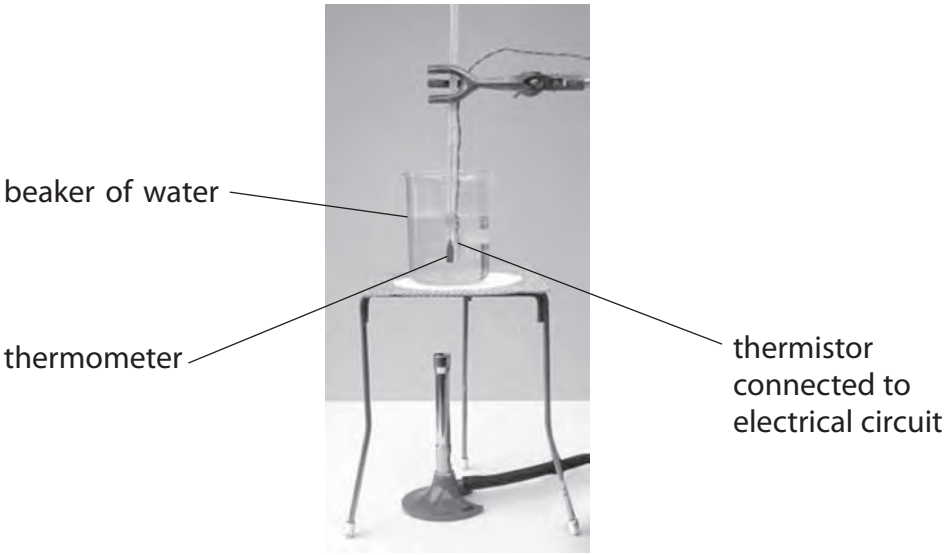
5 A student investigates the resistance of a thermistor.

(a) Which of these is the correct symbol for a thermistor

(1)

☒	**A**	
☒	**B**	
☒	**C**	
☒	**D**	

(b) The student uses this apparatus to investigate how the resistance of a thermistor changes with temperature.



(i) Explain why the student places the thermistor in a beaker of water.

(2)

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(ii) The student also uses a voltmeter and an ammeter.

How should the voltmeter and the ammeter be connected in his circuit?

(1)

	Voltmeter	Ammeter
☒ **A**	in parallel across the power supply	in parallel across the thermistor
☒ **B**	in parallel across the thermistor	in series with the thermistor
☒ **C**	in series with the power supply	in series with the thermistor
☒ **D**	in series with the thermistor	in parallel across the thermistor

(c) The table shows the student's results.

Temperature in °C	Resistance in Ω
0	10 000
10	7 060
20	5 000
40	2 670
60	2 350
80	1 080
100	609

(i) Plot a graph of these results on the grid.

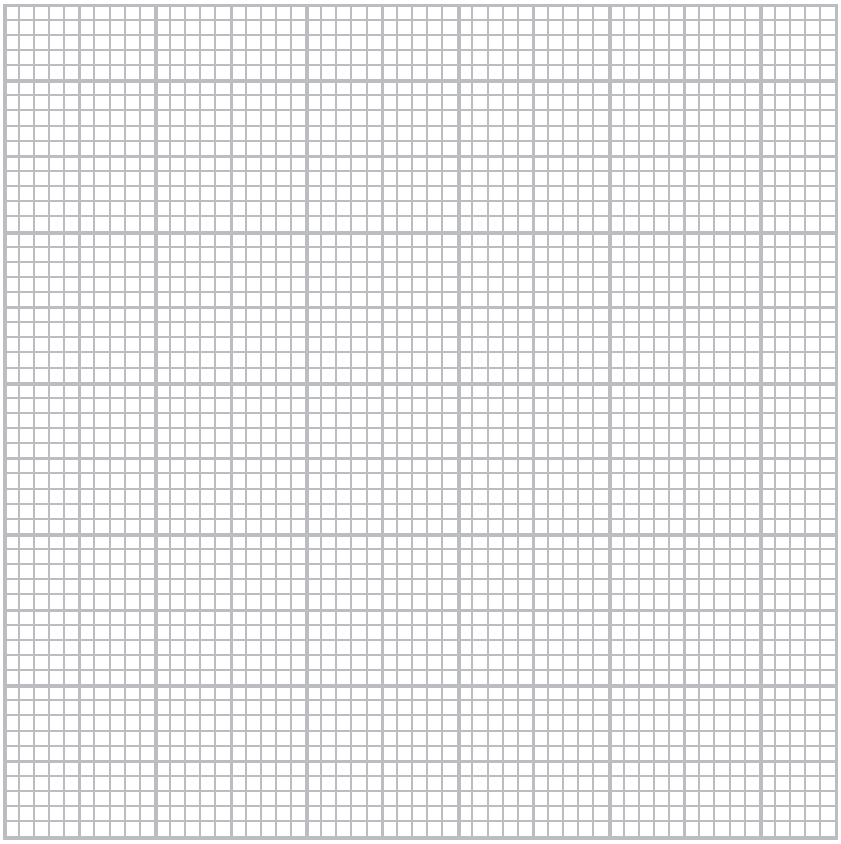
(4)

(ii) Circle the anomalous point on the graph.

(1)

(iii) Draw a curve of best fit.

(1)



(d) (i) Why is the maximum temperature in the student's investigation limited to 100 °C?

(1)

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(ii) Suggest how the student obtains readings below room temperature.

(1)

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(Total for Question 5 =12 marks)