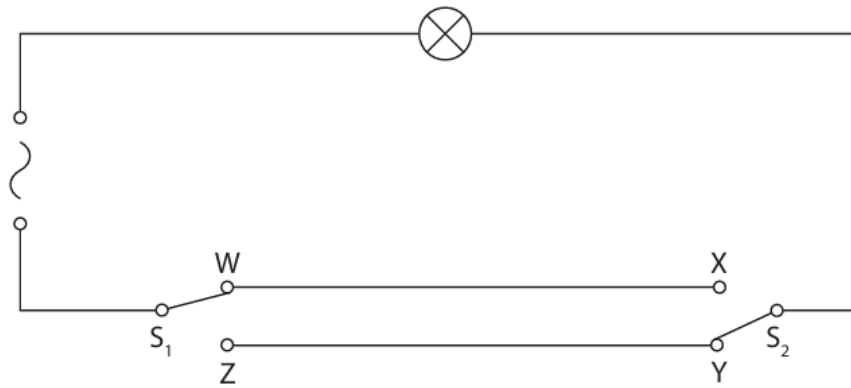


Time: 40 minutes

Answer all questions.

01) This diagram shows a lighting circuit.



(i) Complete the table by putting a tick (\checkmark) in the box if the lamp is lit and a cross (\times) in the box if the lamp is not lit. (2)

S_1 position	S_2 position	lamp lit (\checkmark or \times)
W	X	
W	Y	
Z	X	
Z	Y	

(ii) Suggest where this circuit would be useful in a house. (1)

.....

02) (a) The diagram shows part of an electric circuit.

Complete the circuit diagram by adding,

- a resistor in series with the lamp and battery
- a second lamp in parallel with the first lamp
- a voltmeter that measures the voltage across the resistor
- an ammeter that measures the current in the resistor

(4)



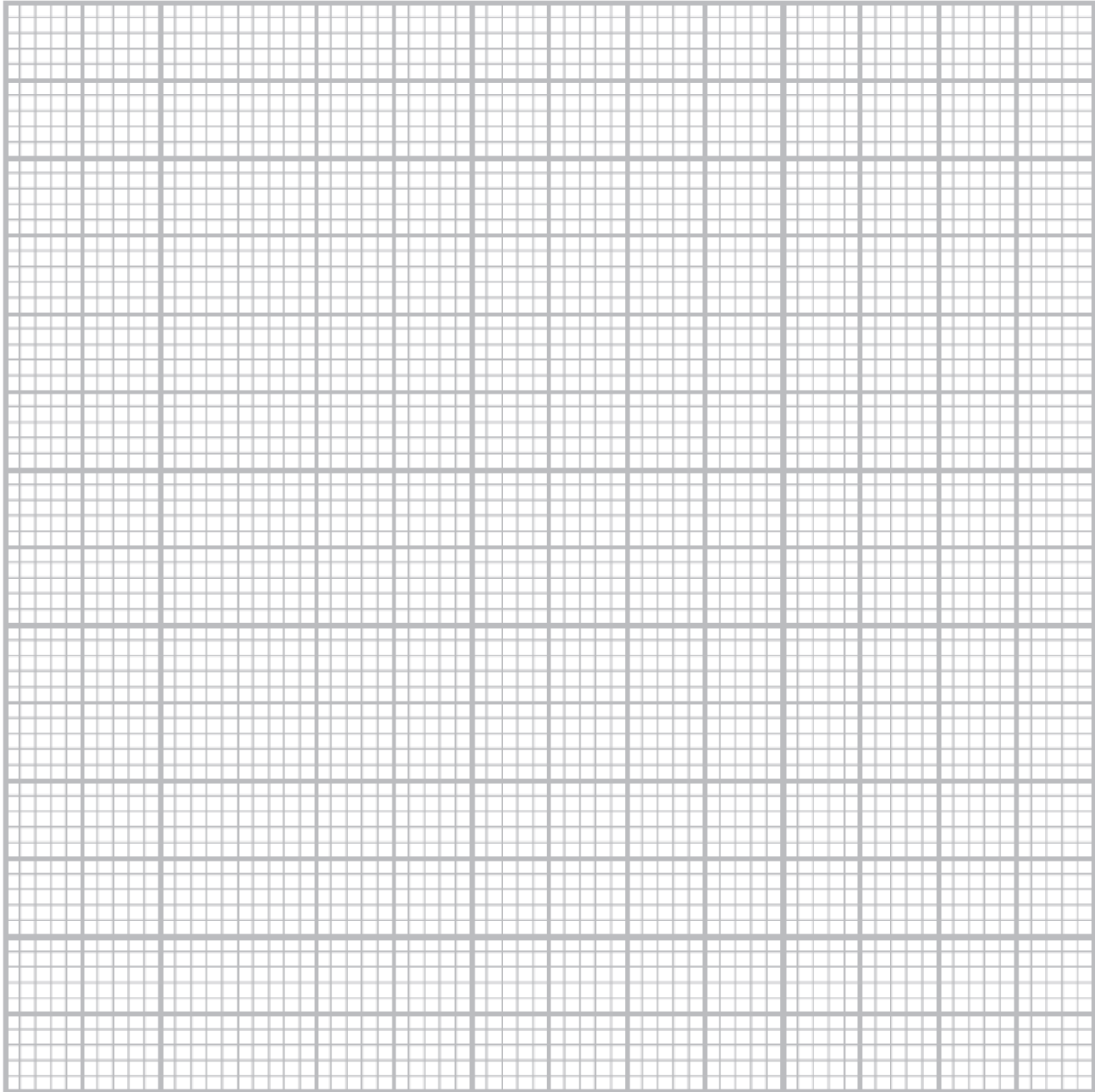
03) The current in a resistor is measured for different voltages. The table shows the results.

Voltage in V	Current in A
1.0	0.10
2.5	0.25
3.0	0.30
4.5	0.40
5.0	0.50
6.0	0.60

(i) Plot a graph of this data on the grid. (4)

(ii) Circle the anomalous point on the graph. (1)

(iii) Draw a line of best fit. (1)



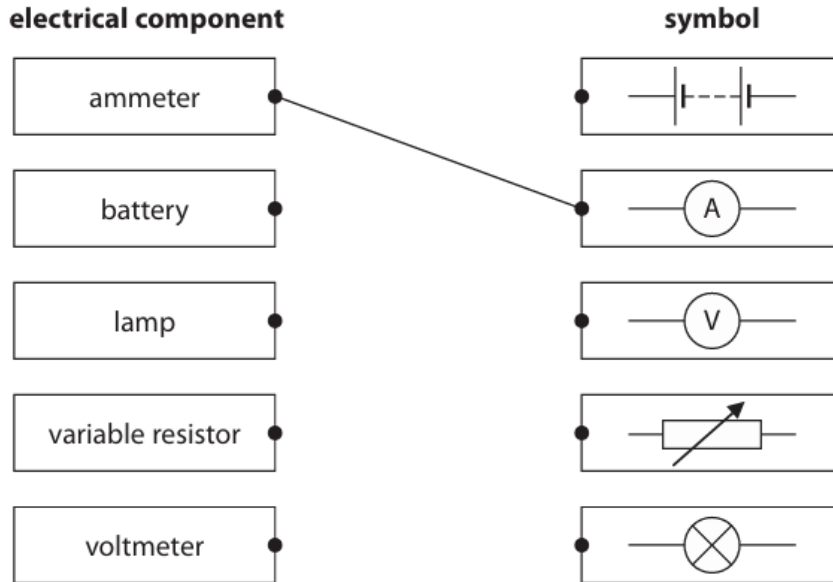
(iv) State the equation linking voltage, current and resistance. **(1)**

(v) Use your graph to find a value for the resistance of the resistor. **(2)**

04) (a) Draw a straight line from each electrical component to its correct symbol.

One has been done for you.

(2)



(b) (i) Name an electrical component whose resistance decreases when it is moved into brighter light. (1)

.....

(ii) Name an electrical component whose resistance decreases as its temperature increases. (1)

.....

Total = 20 marks