<table>
<tr><th>Question Number</th><th>Answer</th><th>Mark</th></tr>
<tr><td>*15</td><td>
This question assesses a student's ability to show a coherent and logically structured answer with linkages and fully-sustained reasoning.
Marks are awarded for indicative content and for how the answer is structured and shows lines of reasoning.
The following table shows how the marks should be awarded for structure and lines of reasoning.
<table>
<tr><td></td><td>Number of marks awarded for structure of answer and sustained line of reasoning</td></tr>
<tr><td>Answer shows a coherent and logical structure with linkages and fully sustained lines of reasoning demonstrat throughout</td><td>2</td></tr>
<tr><td>Answer is partially structured with some linkages and line of reasoning</td><td>1</td></tr>
<tr><td>Answer has no linkages between points and is unstructure</td><td>0</td></tr>
</table>
Total marks awarded is the sum of marks for indicative content and the marks for structure and lines of reasoning
<table>
<tr><th>IC points</th><th>IC mark</th><th>Max linkage mark</th><th>Max final mark</th></tr>
<tr><td>6</td><td>4</td><td>2</td><td>6</td></tr>
<tr><td>5</td><td>3</td><td>2</td><td>5</td></tr>
<tr><td>4</td><td>3</td><td>1</td><td>4</td></tr>
<tr><td>3</td><td>2</td><td>1</td><td>3</td></tr>
<tr><td>2</td><td>2</td><td>0</td><td>2</td></tr>
<tr><td>1</td><td>1</td><td>0</td><td>1</td></tr>
<tr><td>0</td><td>0</td><td>0</td><td>0</td></tr>
</table>
Indicative content
IC1 Connect the thermistor to a suitable circuit with voltmeter and ammeter
Or Connect the thermistor to an ohmmeter
IC2 Place the thermistor in a water bath
Or place the thermistor in a beaker of water
IC3 Add ice to reduce the water temperature to 0°C
IC4 Heat the water and use a thermometer to measure the temperature
Or Heat the water and use a temperature sensor and datalogger to measure the temperature
IC5 Determine the resistance R (for each temperature) using R = V/I
Or Measure the resistance (for each temperature) by reading from ohmmeter
IC6 Stir the water (to ensure that the thermistor is at the temperature measured by the thermometer)
Or Place the thermometer near to the thermistor (to ensure that the thermistor is at the temperature measured by the thermometer)
Or Stop heating and wait before taking readings
Or Use small current/p.d. (to prevent it heating the thermistor)
Or Switch current off between readings
Or Read thermometer at eye level
</td><td>6</td></tr>
<tr><td></td><td>Total for question 15</td><td>6</td></tr>
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