

<ul style="list-style-type: none">• Explain the following terms or concept.	Marks 3
<p>Third law of thermodynamics</p> <p>A perfect pure crystal at absolute zero (0 K) has zero entropy. It is not possible to reduce the temperature of any system to absolute in a finite number of finite operations.</p>	
<ul style="list-style-type: none">• The specific heat capacity of water at 0 °C is undefined. Explain why this is so.	2
<p>At 0 °C, any heat transferred into or out of the system is either causing the ice to melt or the water to freeze – there is no change in the temperature. Specific heat capacity is defined as $c = q/m\Delta T$. As there is no change in temperature, $\Delta T = 0$ and c is undefined.</p>	