

<p><b>1. What are SMART MATERIALS?</b></p> <p>Smart Materials are those whose physical or mechanical properties react to a change in their environment.</p>	<p><b>2. Electroluminescent Material</b></p> <p>These materials produce a visible light when exposed to an electrical current.</p> <p>These are most easily identifiable by their blue glowing light.</p>
<p><b>3. What are Quantum Tunnelling Composites?</b></p> <p>Quantum tunnelling composites are flexible polymers that contain conductive nickel particles.</p>	<p><b>4. Why are Quantum Tunnelling Composites a smart material?</b></p> <p>They are considered smart materials because they can either be a conductor of electricity or an insulator.</p>
<p><b>5. What are Shape Memory Alloys (SMA's)? Name the two most common.</b></p> <p>SMA's have a 'memory' which allow them to return to their original shape when heated.</p> <p>The two most common SMA's are Nitinol and Nickel.</p>	<p><b>6. What is Polymorph?</b></p> <p>Polymorph is a thermoforming polymer, which is usually supplied in a granular form and is a smart material due to becoming soft and pliable at a low temperature.</p>
<p><b>7. What is Photochromic and how is it used?</b></p> <p>Photo chromic pigment changes colour in response to light intensity.</p> <p>It can be found in sunglasses where the lenses become darker/lighter in response to UV radiation.</p>	<p><b>8. What is Thermochromic pigment?</b></p> <p>Thermochromic pigments change colour in response to heat. They can be engineered to respond to a specific temperature or temperature range.</p>
<p><b>9. Explain Micro-encapsulation.</b></p> <p>This is the process of applying microscopic capsules to fibres or fabrics.</p> <p>The capsules can contain, vitamins, therapeutic oils, moisturisers or antiseptic chemicals.</p>	<p><b>10. What is Biomimetics?</b></p> <p>This is when inspirations for new fabrics come from the natural world.</p> <p>They can mimic different situations found in nature.</p> <p>E.g. – Fastskin was developed by Speedo to help improve swimmers movements through the water.</p>