

**Q6.** This question is about materials and components. It is worth a total of 15 marks.

- (a) (i) Textile fibres can be classified as natural or man made.  
Using the words from the list below, complete the table by placing each fibre under the correct source. [4]

Viscose		Linen		Wool		Polyester	
<i>Natural</i>				<i>Man made</i>			
<i>Plant</i>		<i>Animal</i>		<i>Synthetic</i>		<i>Regenerated</i>	
<b>Linen</b>		<b>Wool</b>		<b>Polyester</b>		<b>Viscose</b>	

- (ii) Tick (✓) which **two** of the following statements are correct. [2]

- Fabric properties can be improved when fibres are combined together.
- Wool fibres treated with chlorine become colourfast.
- Cellulosic fibres are considered more environmentally friendly.
- A Teflon finish prevents materials shrinking when washed.

- (b) Explain why each of the materials stated would be suitable for the products shown below.



- (i) Material: *Knitted cotton*

Explanation: .....

Children often spill their food/drink, cotton is absorbent so any spillages will be soaked up quickly making the child more comfortable/ keep the child dry.



- (ii) Material: *Cordura*

Explanation: .....

Cordura is a hardwearing material which will stand up to a lot of wear and tear making it very suitable for a boot bag.

(c) The picture below shows an example of a smart material.



(i) Complete the following sentence: [1]

.....  .....dyes change colour in response to a change in the light.

(ii) Explain the meaning of the term micro-encapsulation. [4]  
*Exemplify your answer.*

Microscopic particles which have beneficial properties are added to the fibres of materials. When friction is applied to the material (for example coming into contact with skin through wearing a garment made from encapsulated material) the beneficial properties are released. An example could be bandages which have antibacterial properties which promote healing.

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