Ecodesign in the Textile sector

Unit 8: Recycling processes in the textile industry

UNIT QUIZ

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N°	Question
1	The linear production model is synonymous with "take, produce, discard".
2	"Disposable" means valuing waste or refuse as a resource.
3	Extending the life cycle of textile products means developing new materials.
4	The linear production model foresees an improvement in the quality of the materials and an increase in production, ignoring the end of the products.
5	The fundamental concepts for the creation of a sustainable system are the reduction of consumption of primary resources and the reuse and recycling of materials.
6	The reduction of waste generated by a production system refers to the reduction of the number of defective end products.
7	Sustainability can refers to:
8	The circular economy tends ideally to avoid impacts on the environment.
9	Ellen MacArthur Foundation is one of the world's leading fashion brands
10	The circular economy aims to rebuild the capital employed, be it financial, productive, human, social or natural.
11	The strategy for the circular economy is based on concepts:
12	The linear economy foresees a productive model "from the cradle to cradle".
13	Reducing textile waste is only possible for man-made fibres and not for natural fibres.
14	"Downcycling" is used when products are recycled and transformed into other materials and/or products of lower value and quality.
15	The term "downcycling" means that the product must be recycled because of the continuous reduction in quality.
16	Downcycling occurs when it is no longer possible to recycle the product for landfill.

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17	In the textile sector, "downcycling" is the use of fibres obtained by the process of unravelling rags.
18	A used dress is a waste.
19	The term "upcycling" refers to a practice that transforms a product at the end of its life into another, always different than original product.
20	The main feature of upcycling is that new products will have the same or better quality or value than the original ones.
21	The term "recycling" describes an industrial process of converting waste.
22	The "Cradle to Cradle" philosophy means that a yarn must return to being a yarn.
23	The "Cradle to Cradle" philosophy means that any type of waste can become a "resource" for new life cycles.
24	Man-made textile materials (man-made and artificial) cannot be recycled.
25	The approach to "closing the loop" has a purpose:
26	Industry must reduce production cycles in order to preserve and enhance nature's ecosystems and biological cycles.
27	Circular economy means:
28	Textile waste can be divided into:
29	Pre-consumption textile waste is waste generated during production processes.
30	Unsold items and goods in stock can be considered as waste.
31	Post-consumer textile waste is end-of-life products destined for disposal or landfill.
32	Leftovers generated within the distribution system or for commercial reasons are not waste.
33	The clothes donated to charities are post-consumer textile waste.
34	Dresses used in the home cannot be recycled, but only donated.
35	The "3R" approach means reduction, reuse and recycling.
36	The "3R" approach means re-pairing, re-mending and re-sewing.

37	The objective of the 3R strategy is to extend the life cycle of products by avoiding landfilling in the first place.

N°	Question
38	Waste management strategies intervene at the end of the industrial process and help to offset the negative environmental impacts of waste generation.
39	Waste management strategies should not intervene during the industrial process of product generation.
40	Waste management strategies need to be designed and developed during the initial design phase of the product and the process for its implementation.
41	The waste management strategies shall include:
42	Waste management strategies include the reduction of material treatment.
43	The recovery of materials used in low cost goods involves a general lowering of their general characteristics.
44	The use of indistinct blends of recycled fibres leads to a general reduction in their general characteristics and value.
45	The reduction in the consumption of raw materials, energy and chemicals used in the textile industry is mainly linked to the optimisation of production processes and the development of new technologies.
46	Reducing the consumption of textile raw materials is only possible by reducing the weight of clothes.
47	The re-use of products for new uses, consumers and markets enables them to extend their life cycle.
48	The reuse of textile products involves high energy consumption.
49	The energy used to collect, order and resell used clothing can be 10-20 times less than the energy needed for recycling.
50	Vintage" is the practice of accelerated aging of clothing.
51	The re-use of textile products reduces the use of raw materials and the generation of waste.
52	Repairing and refurbishing clothes is more profitable than producing new products:

53	The interventions necessary to repair a product or to give it a new appearance:
54	Repairing and rearranging products depends on the relationship between labour and material costs and the availability of goods.

N°	Question
55	In recent decades, repair, both domestic and handicraft, has been influenced:
56	In recent decades, repair, both domestic and handicraft, has been influenced:
57	In recent years, there has been a growing interest in product repair and maintenance practices.
58	Techniques for giving new life to used fabrics - such as restyling, redesigning clothes, decorations and overprints - increase their value and delay their disposal in landfills.
59	Recycling" is the process of converting materials used in a product back into a new production process and thus into a new life cycle.
60	During the recycling process the fabrics have to be converted into fibres:
61	Mechanical processes make it possible to cut, crush and card fabrics to facilitate the fraying of fibres.
62	Chemical recycling processes focus on the chemical properties of the fibres and are directly related to the type of fibre or blended type.
63	The first step in the recycling process is to sort the waste collected.
64	Manual sorting is the only way to sort textile waste.
65	The manual selection is made on parameters easily determinable by humans.
66	Fourier transform infrared spectroscopy (FTIR) has the potential to determine the colour and composition of textile fibres.
67	A recycled product selected for its colour and fibre composition has greater homogeneity.

68	Radio Frequency Identification (RFID) tags enable a dynamic classification of textile articles based on a wide range of criteria.
69	The 2D bar label must be presented manually to a reader, which means that the condition and quality of the textile can be verified simultaneously.
70	The recycling process requires less use of resources than virgin materials.
71	Recycling technologies are based on the materials used and the final articles to produce.

N°	Question
72	Primary recycling is the recycling of a product in its original form.
73	Secondary recycling means that the chemical properties of the product are reduced compared to the original.
74	Secondary recycling involves mechanical treatment of the waste.
75	Tertiary recycling is carried out chemically.
76	Tertiary recycling converts waste material into a new fibre
77	Tertiary recycling converts waste material into monomer or chemical substance.
78	Quaternary recycling is the process of burning solid waste to generate heat.
79	The recycling of used clothes consists only of a carding process.
80	The mechanical recycling process consists of:
81	Shorter are the original fibres, better is the quality of the recycled fibres.
82	Post-consumer textile waste are generally better because they allow for a greater variety of fibres and colours.
83	Medium-quality recycled fibres are not suitable for fabric production.
84	lower quality recycled fibres can be used as reinforcement
85	The quality of recycled fibre yarns depends on the length, fineness and strength characteristics of the fibres obtained from the "waste material" and on their colour.
86	Wool fibres are usually recycled and blended with virgin wool to produce new textile products: the final product will be less soft, but more durable.

87	Pure white cotton fibres can be converted by chemical transformation into superabsorbent polymers for the production of medical textiles.
88	Coloured cotton waste can be converted into drawing paper.
89	Blended fibers can be used for the production of nonwovens and felts for insulation.
90	A mechanical process is also widely used to recycle synthetic materials, including plastic bottles and polyester fibers.
91	All recycled synthetic fibres have properties similar to virgin fibres.
92	Chemical recycling is the main method used to process synthetic fibres collected in the textile sector.

N°	Question
93	Natural fibres cannot be processed by a chemical process.
94	Polyester can be recycled both mechanically and chemically.
95	Nylon and spandex is a common blends used in high-performance sportswear and activewear.
96	The cotton-polyester blends must first be separated by mechanical processes.
97	The recycling of blends of fibers is more complicated due to the different physical and chemical properties of the fibres present in the waste.
98	The blends of cotton and polyester, which are the most widespread, come:
99	The circular economy is a global trend, aimed to repeat the same products.
100	The linear economy is the discipline that studies the development of technological solutions for the transport sector.