

Markscheme

November 2022

Design technology

Higher level

Paper 3

9 pages

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General Marking Instructions

Subject Details: Design Technology HL Paper 3 Markscheme

Mark Allocation

Candidates are required to answer **ALL** questions in Section A (total **[20 marks]**) ONE question in Section B **[20 marks]**. Maximum total = **[40 marks]**.

Markscheme format example:

Question			Answers	Notes	Total
4.	b	ii	the displacement and acceleration; are in opposite directions;	Accept force for acceleration .	2

- Each row in the “Question” column relates to the smallest subpart of the question.
- The maximum mark for each question subpart is indicated in the “Total” column.
- Each marking point in the “Answers” column is shown by means of a semi-colon at the end of the marking point.
- A question subpart may have more marking points than the total allows. This will be indicated by “**max**” written after the mark in the “Total” column. The related rubric, if necessary, will be outlined in the “Notes” column.
- An alternative wording is indicated in the “Answers” column by a slash (/). Either wording can be accepted.
- An alternative answer is indicated in the “Answers” column by “**OR**” on the line between the alternatives. Either answer can be accepted.
- Words in angled brackets **< >** in the “Answers” column are not necessary to gain the mark.
- Words that are underlined are essential for the mark.
- The order of marking points does not have to be as in the “Answers” column, unless stated otherwise in the “Notes” column.
- If the candidate’s answer has the same “meaning” or can be clearly interpreted as being of equivalent significance, detail and validity as that in the “Answers” column then award the mark. Where this point is considered to be particularly relevant in a question it is emphasized by **OWTTE** (or words to that effect).
- Remember that many candidates are writing in a second language. Effective communication is more important than grammatical accuracy.
- Occasionally, a part of a question may require an answer that is required for subsequent marking points. If an error is made in the first marking point then it should be penalized. However, if the incorrect answer is used correctly in subsequent marking points then **follow through** marks should be awarded. When marking, indicate this by adding **ECF** (error carried forward) on the script. “ECF acceptable” will be displayed in the “Notes” column.
- Do **not** penalize candidates for errors in units or significant figures, **unless** it is specifically referred to in the “Notes” column.

Section A

Question		Answers	Notes	Total
1.	a	Field research; Methods of extreme; Observation; Interviews; Focus groups; Questionnaires / surveys; Affinity diagramming; Participatory design; Prototype and usability testing sessions; Usability laboratories / user trials; Testing houses;	<i>Award [1] for listing each UCD strategy that might have been used in the design and development of the Swipegloves up to [2 max].</i>	2
1.	b	Geographical sectors will help Swipegloves focus on particular regions where people wear gloves/where it is cold; This allows them to use their touchscreens outdoors/in cold climates;	<i>Award [1] for identifying a way how geographical market sectors can be used to determine where Swipegloves touchscreen gloves would be sold and [1] for a development that way up to [2 max].</i>	2
1.	c	Psychological pricing; to give the consumers the impression they are paying less;	<i>Award [1] for identifying the pricing strategy Swipegloves used for their first pair of gloves and [1] for a brief explanation of why that strategy is appropriate up to [2 max].</i>	2

1.	d	<p>Environmental scanning: Environmental scanning is the study and interpretation of technological advances and trends/requires companies to look externally at the natural environment to identify trends/opportunities/threats that can adversely affect the development of a product; by identifying there was a problem with standard gloves; and determining they were not compatible with touchscreen devices; which led them to redesign the gloves to meet the demand for people who wish to wear gloves when using a device with a touchscreen;</p>	<p><i>Award [1] for identifying a way how Swipegloves would have used the market research strategy of environmental scanning to identify this design opportunity and [1] for each subsequent development of up to [4 max].</i></p>	4
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Question		Answers	Notes	Total
2.	a	Overproduction; waiting; transporting; inappropriate/over processing; (unnecessary) inventory; (unnecessary/excess) motion; defects;	<i>Award [1] for listing of the Seven Wastes of Lean Manufacturing that companies such as John Deere aim to eliminate up to [2 max].</i>	2
2.	b	The ability to customise the product; enables customers to purchase exactly what they want/to only pay for what they need/may lead to greater ownership of the product;	<i>Award [1] for identifying a way how John Deere's "Build Your Own" option provides customers with Value for Money [1] for a development up to [2 max].</i>	2
2.	c	John Deere does not keep stock; and only produces what has been ordered/orders from distributors and suppliers;	<i>Award [1] for identifying how John Deere's "Build Your Own" is an example of a Just in time (JIT) production strategy [1] for a development up to [2 max].</i>	2
2.	d	Quality assurance: QA is process orientated/aims to meet pre-determined standards; designed to prevent wrong customization (defects); through material and parts checks/equipment checks/well-trained staff/well-maintained website/selection of third-party suppliers/lean production; enabling John Deere to deliver on time/to reduce the time between a clients' order and delivery;	<i>Award [1] for identifying how John Deere can use quality assurance to ensure clients receive what they ordered and [1] for each subsequent development of that advantage up to [4 max].</i>	4

Section B

Question		Answers	Notes	Total
3.	a	<p>only natural/recycled/recyclable materials used / moral obligation to use sustainable materials / use materials with minimal impact on the environment;</p> <p>all materials are ethically sourced/fibres from FSC certified trees;</p> <p>use of the Carbon Count Label/licensing labels to show production operations and crucial contracts with governments and other environmental stakeholders;</p> <p>donate shoes to charities/establishing initiatives with charities to support reputation impact;</p> <p>(Sustainability agenda involves all aspects of the) Triple Bottom Line /Meeting the needs of the present customers without compromising the capability for future generations;</p>	<p><i>Award [1] for listing each way that Sprintkind demonstrates corporate social responsibility (CSR) up to [2 max].</i></p>	2
3.	b	<p>Sustainability reporting refers to a company's report that focuses on its environmental (economic, social and governance, triple bottom line) performance;</p> <p>it builds more trust /encourages brand loyalty / increases transparency / communicates impacts / demonstrates accountability / creates a competitive advantage in the market;</p>	<p><i>Award [1] for identifying how Sprintkind's sustainability reporting enhances its green credentials and [1] for a development of up to [2 max].</i></p>	2
3.	c	<p>The brand uses natural/recycled/recyclable/organic/sustainable materials; that are cycled in a closed continuous loop / that decompose / are biodegrade/are compostable / that create zero waste;</p>	<p><i>Award [1] for identifying one way how Sprintkind products address Datschefski's cyclic principle of sustainable design and [1] for a development of that way up to [2 max].</i></p>	2

Question 3 continued

Question		Answers	Notes	Total
3.	d	<p>Sustainable consumption is the consumption of goods and services that have a minimal impact on the environment;</p> <p>the Carbon Count label demonstrates Sprintkind's commitment to low carbon emissions / informs consumers of Sprintkind's low carbon footprint;</p> <p>provides consumers with another way to compare products / aids consumers who wish to minimize their ecological footprint (and don't want to contribute to global warming made by their purchase);</p> <p>encourages consumers to switch from other brands to Sprintkind / informs consumers to make conscious decisions to purchase sustainable products/ encourages accountability;</p> <p>may stimulate demand for the use of the Carbon Count label from consumers /pressure groups/legislation/eco fans/eco warriors/eco champions;</p> <p>provides an incentive (inspiration) for the fashion industry to follow / to compete/ to gain a competitive advantage /develop their own pioneering strategy;</p> <p>inspires other brands to use the Carbon Count label;</p>	<p><i>Award [1] for identifying a reason how the Carbon Count label on Sprintkind products can support sustainable consumption and [1] for each subsequent development of that reason up to [5 max].</i></p>	5

Question 3 continued

Question		Answers	Notes	Total
3.	e	<p>Physio-pleasure: The brand uses natural materials (superfine wool, sugarcane, tree fibre); which are odour free/breathable/temperature-regulating/lightweight; deriving pleasure from their comfort/from senses of touch and smell;</p> <p>Ideo-pleasure: The brand uses natural and recycled materials from ethical sources / the brand strives to become carbon neutral / the brand uses a Carbon Count label; partners with charities / donates shoes to underprivileged people; appealing to the values/ideals of eco-conscious users;</p> <p>The brand items are simple/aesthetically pleasing; limited range of natural colours; appealing to the tastes of minimalist users;</p> <p>Socio-pleasure: Choosing sustainable products conveys a certain status/self-image; deriving pleasure from a sense of belonging to a group of ethical consumers / from a brand that donates to charities; initiating social conversation (conversation starters);</p>	<p><i>Award [1] for identifying the role of physio-pleasure in satisfying Sprintkind consumers and [1] for each subsequent development of up to [3 max].</i></p> <p><i>Award [1] for identifying the role of ideo-pleasure in satisfying Sprintkind consumers and [1] for each subsequent development of up to [3 max].</i></p> <p><i>Award [1] for identifying the role of socio-pleasure in satisfying Sprintkind consumers and [1] for each subsequent development of up to [3 max].</i></p> <p><i>Mark as [3] + [3] + [3].</i></p>	9