

Design & Technology
AQA A-Level

Product development and improvement

Materials required for questions

- Pencil
- Rubber
- Calculator

Instructions

- Use black ink or ball-point pen
- Try answer all questions
- Use the space provided to answer questions
- Calculators can be used if necessary
- For the multiple choice questions, circle your answer

Advice

- Marks for each question are in brackets
- Read each question fully
- Try to answer every question
- Don't spend too much time on one question

Good luck!

Q1. What is essential when designing a product to meet specification criteria?

- A** Ensuring the product aligns with predefined performance, aesthetic, and functional requirements
- B** Prioritising cost reduction over material quality
- C** Using only traditional manufacturing methods

Q2. What does "fitness for purpose" mean in product design?

- A** A product being visually appealing to all users
- B** A product fulfilling its intended function effectively and reliably
- C** A product being lightweight and portable

Q3. Why is accuracy of production critical in manufacturing?

- A** To guarantee consistency in product dimensions and quality
- B** To reduce the time spent on prototyping
- C** To eliminate the need for quality checks

Q4. How can critical assessment of existing products contribute to new designs?

- A** By copying competitor products directly
- B** By identifying flaws or improvements to inspire innovation
- C** By reducing the need for user research

Q5. Describe how the critical assessment of existing products can influence the work of designers and manufacturers **(6 marks)**

Answers

Q1. A

Q2. B

Q3. A

Q4. B

Q5.

- Critical assessment of existing products is essential in identifying weaknesses in existing products. A manufacturer would need to be confident that their product is better or more desirable than the current products on the market.
- The ergonomics of existing products can be tested and evaluated to identify desirable features that may be incorporated into a new product.
- The use of materials can be analysed to identify improvements or alternative materials that may be considered in product manufacture.
- Critical assessment can help identify why a competitor's product is successful and ensure that a comparative level of performance is achieved or exceeded.
- A manufacturer can analyse how a product is manufactured to identify improvements in the product manufacture or product assembly phase.
- The way in which a user interacts with a product can be analysed in order to improve the user experience or make the next iteration more instinctive.