**Design & Technology**

**AQA A-Level** Logo

Description automatically generated with low confidence

**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.