

OCR A-Level

**Evaluating Existing
Products for Design
Improvement (2.1a)**

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. When analysing existing products, why is identifying constraints particularly important for future design work?

- A** Constraints ensure the final product will be cheaper than competitors
- B** Constraints prevent designers from considering alternative materials
- C** Constraints highlight limitations that must be addressed or engineered around in new design solutions

Q2. When evaluating the *context* of an existing product, which insight most directly informs strategic design decisions?

- A** Aesthetic preferences of the design team
- B** The social, environmental, and situational conditions under which the product is expected to function
- C** Manufacturing preferences of a single supplier

Q3. Why is analysing the combination of materials and components in a product essential for innovation?

- A** It proves the product was originally designed sustainably
- B** It ensures future products use identical material compositions
- C** It reveals relationships between material properties, performance, and potential improvements

Q4. Evaluating construction and manufacturing methods in existing products primarily helps designers:

- A** Identify feasible production techniques aligned with cost, scale, and available technology
- B** Guarantee the product can only be made through automation
- C** Avoid involving engineers in early design stages

Q5. The image below shows a hearing aid.



Identify three impacts on the user of incorporating new and emerging technologies into the design of the hearing aid.

Justify each of your answers. **(6 marks)**

Q6. The image below shows a games controller.



Identify two ways in which the design of the controller is inclusive.

Justify each of your answers **(4 marks)**

Answers

Q1. C

Q2. B

Q3. C

Q4. A

Q5.

Possible impacts on the user may include:

- Positive effect on lifestyle and ease of use, through seamless updating/ easier charger leads/ reduction in size (1) means that can be worn more discretely and seen as less of a “disability” (1).
- Fashion influencing design so users feel that the device is not something to hide, (1) more throw away devices as they go out of fashion which could have a negative environmental effect/ larger cost for the consumer (1).
- Cost could increase with more complex features (1) which may make the product less affordable, making it less accessible to the people that need it (1).
- May be harder for elderly to “keep up” with new technologies (not got a compatible phone etc) (1) so this could alienate a key target market (1).
- Any other valid suggestion.

Q6.

Positive ways may include:

- Black is a neutral colour (1) so will appeal to a wide range of genders (1).
- Buttons can be assigned different functions or left hand/right hand use can be set up (1) so users with less mobility/ who are left-handed will be able to use the range that is suitable/ comfortable for them (1)
- There are no words on the design - symbols are used (1) so it can be used by illiterate/ partially sighted or multiple languages without difficulty (1).
- Any other suitable response.

Q7.

