

Design & Technology

AQA GCSE

How the critical evaluation of new and emerging technologies informs design decisions

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. Planned obsolescence is when a product is designed?

- A** To be repairable
- B** To have a short lifespan
- C** To have replaceable sections

Q2. What is a feature of 'design for maintenance'?

- A** Minimizing the number of replaceable components to reduce costs
- B** Ensuring easy access to critical parts for inspection and repair
- C** Using custom-made parts to improve performance

Q3. Why is considering 'planned obsolescence' controversial from an environmental perspective?

- A** It encourages frequent upgrades, increasing resource depletion and waste
- B** It makes products more affordable for low-income consumers
- C** It simplifies recycling processes

Q4. A company designs a smartphone with non-replaceable batteries to push users to upgrade sooner. Which ethical principle does this violate?

- A** Transparency – Failing to disclose the short lifespan
- B** User autonomy – Removing the right to repair
- C** Both of the above

Q5. Explain the term 'planned obsolescence'. Give an example of a product designed for 'planned obsolescence' in your answer **(3 marks)**

Q6. Built-in obsolescence has had a number of effects on society. Explain two positive effects built-in obsolescence has had on the consumer **(6 marks)**

Answers

Q1. B

Q2. B

Q3. A

Q4. C

Q5.

- Because a product may only be designed to have a short useful life e.g., disposable products like a milk carton, contact lenses, disposable razors.
- A company may take the view of designing a limited lifespan into a product to ensure continuous demand e.g., mobile phone before a new, improved replacement comes along.
- Product may be designed and made so that after a time cannot be repaired or upgraded. A company may not want to invest time and resources (spare parts and technical support) supporting old tech e.g., a flat-screen TV.
- Some manufacturers design products with planned obsolescence in mind to ensure there is always a market for new and improved products/sales to keep the company profitable, e.g., computer game companies. Upgrades/speeds/better graphics are all part of a more realistic experience for gamers. Computers become obsolete unless upgraded.
- Planned obsolescence can lead to waste.
- Some products are made of inferior quality/ fragile, so they break and need to be replaced.

Q6.

- Consumers buy up to date products/stay in fashion (1)
- Due to regular/frequent new releases (1)
- Increased customer satisfaction/pleasure (1)
- Consumers want to be seen with the latest product/one-upmanship (1)

- Consumers have a wider selection (1)
- Due to increased competitiveness between businesses (1)
- Leading to competitive prices (1)
- Can plan/budget for replacement (1)
- Increased second hand market (1)

- Drives innovation/new/improved features/multi-function products are developed (1)
- Which can improve consumers quality of life (1)
- Improved safety features/consumers are safer (1)