**Design & Technology**

**AQA GCSE** Logo

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**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)