**Design & Technology**

**Stages of a products life cycle**

**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 happens to a product when it reaches the maturity stage of the product life cycle?

**A** Sales revenue grows over time

**B** Sales revenue declines over time

**C** Sales revenue is constant over time

**Q2.** Which of these statements about product life cycles is true?

**A** The length of every product’s life cycle

is the same

**B** The length of each phase in a product’s

life cycle can be different

**C** A product will be withdrawn once it

enters maturity

**Q3.** In which phase of the product life cycle is a product launched?

**A** Growth

**B** Maturity

**C** Introduction

**Q4.** What is the purpose of a product extension strategy?

**A** To lengthen the life cycle of a product

**B** To prevent a product being successful

**C** To lengthen the introduction phase of a

product’s life cycle

**Q5.** Which of these extension strategies would be most likely to succeed in extending the life cycle of a breakfast cereal?

**A** Making the breakfast cereal available in

a new flavour

**B** Increasing advertising of the breakfast

cereal

**C** Increasing the price of the breakfast

Cereal

**Q6.** Which of the following statements is true?

**A** Disposal is the final step in a product life

cycle

**B** Using cheapest material will always

Extend a product life

**C** Maturity is when the sales start to decline

**Q7.** Discuss cost, sales, profit and market implications to the manufacturer during the various stages of a products life cycle **(9 marks)**

**Q8.** Discuss the advantages and disadvantages surrounding the use of software updates as part of the ongoing maintenance of electronic products. **(9 marks)**

**Answers**

**Q1. C  
Q2. B  
Q3. B  
Q4. A**

**Q5. A**

**Q6. A**

**Q7.**

Introduction stage

* Set-up and marketing costs
* Low output high marginal costs
* Advertising / attracting early adopters
* Slow sales / uptake
* Small market share

Growth stage

* Increasing consumer awareness
* Increasing popularity and sales
* Product tweaking and updates in response to feedback
* Increasing market share
* Development costs covered
* Increasing economies of scale
* Can price goods to give increasing competitive edge
* Higher marginal profit
* Competitors take an interest in product success

Maturity stage

* Market saturation achieved
* Competitors release competing products
* Levelling/slowing of demand
* Price adjustments
* Redevelopment / updates to increase demand
* Facelifts
* Incorporation of updated technology
* Preparation for replacement models

Decline stage

* Reduction in sales
* Impacts on profits
* Development costs fully covered
* Eventual loss of profitability
* Withdrawal from market

**Q8.**

**Advantages**

* Software updates ensure that a device is continually protected from phishing software as it will have the most up to date security settings.
* They can be released frequently to help manufacturers address issues with legacy software and remove any bugs or unwanted features or functions.
* They can ensure that the software on the electronic product is in line with that of the software developers to ensure compatibility with new programmes or apps.
* They can extend the lifespan of a product reducing the need to continually upgrade or replace a device.
* Most software updates are free so the consumer has piece of mind that there will be no additional costs in the lifetime of the product.

**Disadvantages**

* Software updates can often lead to a variation in versions being installed on different devices, preventing files from being opened or updated on machines with incompatible versions.
* They can require access to Wi-Fi or mobile data which may impact updates being downloaded in areas with poor signals.
* On some devices they can only take place when the device such as a phone is connected to a power supply.
* They can take a long time to download and may cause electronic devices to be unusable whilst the download and installation takes place.
* They can make some legacy software redundant if they haven’t been updated in line with an operating system or are no longer supported.
* Often the option for software updates is automatically pushed out to a device, removing the responsibility and control from the user.
* They can affect the function of the product without the user being aware such as slowing down the speed to conserve the battery.
* In some cases, the hardware of the product can prevent any further software updates from taking place, rendering the product obsolete.