

Cambridge IGCSE · Business Studies 0450 · Notes

Achieving quality production

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Read first: [Production of goods and services](#)

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What you need to know

By the end of this topic you should be able to:

1. **What quality means.** Say what quality means for a good or a service, in any kind of business.
2. **Why quality matters.** Explain why quality is important to every business, large or small, making goods or providing services.
3. **Quality control.** Explain what quality control is and how a business carries it out.
4. **Quality assurance.** Explain what quality assurance is and how a business puts it in place.

Exam questions also ask you to weigh up the advantages and disadvantages of quality control and quality assurance for a business, and to judge which one suits it better.

Understand it

What quality means

Quality means that **a good or service meets customers' expectations: it does the job it is meant to do, has no faults and is worth the price paid.**

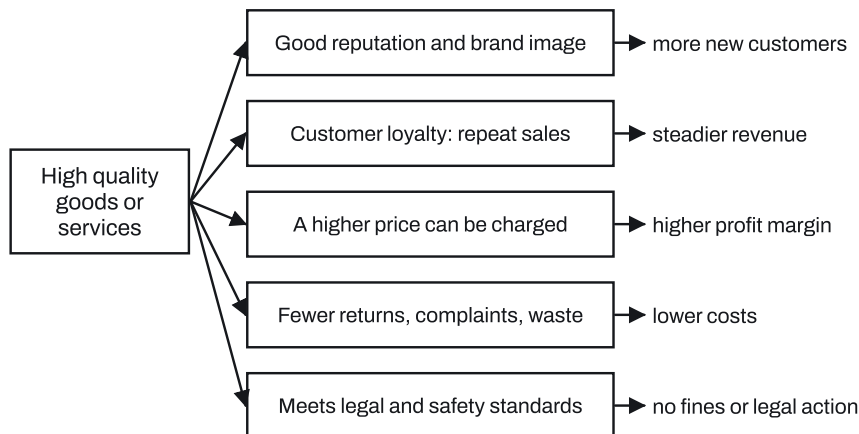
Quality does not mean luxury. A \$2 plastic pen is good quality if it writes smoothly until the ink runs out; a \$200 pen that leaks is poor quality. Customers judge quality against the price they paid and what they expected from it.

- **For a good** (a pair of trainers, a bag of rice, a car), quality means it works, lasts, is safe, looks as it should and is the same every time it is bought.
- **For a service** (a haircut, a bus journey, a hotel stay, a bank account), quality means it is reliable, on time, friendly and helpful, and done right the first time. A service is produced at the same moment the customer receives it, so a poor haircut cannot be checked and thrown away before the customer sees it.

Every business has to think about quality: a street food stall, a hospital, a car factory and an online shop all lose customers if they get it wrong.

Why quality is important

Why quality matters to a business



Each reason below is written as a chain: the point, why it happens, and what it does to the business. Exam answers need this chain, not just the point.

Reason	Why it happens	Effect on the business
Good reputation and brand image	satisfied customers tell friends and family and post good reviews online, so the business becomes known for quality	more new customers, so sales rise without extra spending on advertising
Customer loyalty	customers who were happy last time come back rather than trying a rival	repeat sales give steadier revenue, and loyal customers are cheaper to keep than new ones are to win
A higher price can be charged	customers will pay more for something they trust; quality adds value	a higher profit margin on each item
Fewer returns, complaints and less waste	faulty items do not have to be replaced, repaired or refunded, and fewer materials are thrown away	lower costs, so higher profit
Meeting legal and safety standards	food, medicines, toys and vehicles must meet the law's safety rules	the business avoids fines, product recalls and being taken to court
Competitive advantage	quality makes a product stand out from rivals' products in a crowded market	it can keep or win market share

The opposite is just as true: poor quality spreads a bad reputation quickly (a single online review can be read by thousands), customers switch to rivals, refunds and replacements raise costs, and unsafe products can lead to legal action.

Two warnings from examiners. First, the question is why quality matters **to the business**, so finish each chain with what happens to its sales, revenue, costs or profit, not with "customers are happy". Second, "more sales" and "more customers" are the same point; use two different reasons.

Quality control

Quality control means **checking finished products at the end of production, usually by inspectors, so that faulty ones are found and removed before they reach customers.**

How a business carries out quality control:

1. **Set a standard** for the finished product: its size, weight, strength, taste, appearance.
2. **Inspect** the finished products against that standard. In a large factory, inspectors usually test a **sample** (for example, one item in every hundred) because checking every item takes too long.
3. **Reject** any product below standard: it is scrapped, or sent back to be reworked (put right).
4. In a **service**, the check comes just before the customer receives it: a hotel supervisor inspects rooms after cleaning, or a head chef tastes each dish before it leaves the kitchen.

Advantages of quality control	Disadvantages of quality control
tries to stop faulty products reaching customers, protecting the business's reputation	inspectors must be employed and paid, which raises labour costs
only the inspectors need training in checking, so training costs stay low	faults are found only at the end, after materials and time have been used, so scrapping or reworking them is expensive
production does not stop or slow down for checks along the way	inspectors see the faulty item but not the stage that caused it, so the same mistake can keep being made
simple to set up, and suits a simple product or process	workers may care less about quality because checking is "the inspector's job"
	when only a sample is checked, some faulty products can still reach customers

Quality control does **not** guarantee that every product is perfect: it finds faults that have already been made, and only in the items that are checked.

Quality assurance

Quality assurance means **checking quality at every stage of production, usually by the workers themselves, to stop mistakes happening rather than finding them at the end.**

The idea is to build quality in from the start, so that faulty products are not made at all. How a business puts quality assurance in place:

1. **Agree the standards** for every stage of production with workers and managers, and write them down.
2. **Use approved suppliers:** buy raw materials and components only from suppliers that meet agreed standards, so faults do not arrive in the materials.
3. **Train every worker** to check their own work, and the work passed to them, against the standard.

4. **Check at every stage:** each worker checks before passing work on, so a fault is found where it happened and put right at once.
5. **Find and fix the cause** of any fault, often in teams, so it does not happen again.
6. **Keep records** of checks so managers (and customers) can see that the standards are being met.

A common misunderstanding: quality assurance does **not** mean that workers are watched all the time. It means every worker is trusted to take responsibility for quality.

Advantages of quality assurance

faults are spotted early, at the stage where they happen, so less money and time is spent on scrapping and rework

less waste of materials, which lowers costs

fewer faulty products reach customers, so fewer complaints and returns

giving workers responsibility for quality can raise their motivation

there may be no need to employ inspectors

the business learns where faults come from and can stop them happening again

Disadvantages of quality assurance

every worker must be trained to check their own work, which costs money and takes time

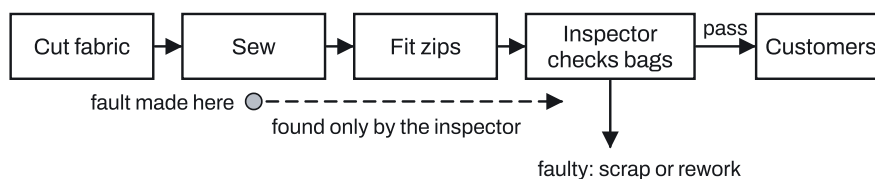
it only works if every worker is skilled and committed; one careless worker lets faults through

production can slow down, as each worker stops to check before passing work on

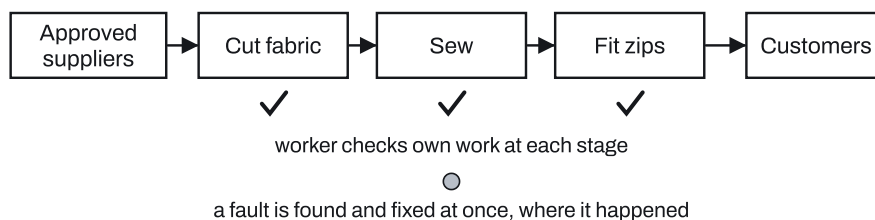
workers may ask for higher pay for the extra responsibility

approved suppliers may be dearer, and limit the choice of suppliers

Quality control: checks at the end



Quality assurance: checks at every stage



Needs: agreed standards, trained and committed workers

In the diagram, a fault made at the sewing stage under quality control travels on through fitting the zips, using up more time and materials, until the inspector finds it at the end. Under quality assurance the sewing worker finds it straight away and fixes it before the bag moves on.

Comparing quality control and quality assurance

	Quality control	Quality assurance
When are checks made?	at the end of production	at every stage of production
Who checks?	inspectors (or a manager)	the workers themselves, with agreed standards
Aim	find faulty products before customers get them	stop faults happening at all
Main cost	inspectors' wages; scrapping and rework	training every worker; possibly higher pay
Effect on workers	quality is someone else's job	every worker is responsible for quality

Neither method is "always best". What decides which suits a business:

- **How complicated the product or process is.** A simple product (a plain T-shirt) can be checked quickly at the end; a product with hundreds of parts (an aeroplane, a car) needs checks at every stage, because a hidden fault deep inside cannot be found at the end.
- **How serious a fault would be.** Where a fault could hurt someone (food, medicines, safety equipment), the business needs to prevent faults, not just catch some of them.
- **How costly a fault is.** If materials are expensive, scrapping finished products wastes a lot of money, which favours quality assurance.
- **The workers.** Quality assurance needs skilled, committed workers. A business with many new or unskilled workers, or high labour turnover, may struggle to make it work.
- **Money for training.** A business short of cash may not afford to train every worker at once.
- **Goods or services.** A service cannot be inspected before the customer receives it, so services rely heavily on staff getting it right first time.

Many businesses use **both**: workers check their own work at each stage, and a final inspection checks a sample before products are sent out.

Key facts and formulas

This topic has no formula list in the exam. "Learn it" means you must remember it.

Fact	Status
Quality: a good or service meets customers' expectations: it does the job it is meant to do, has no faults and is worth the price paid	Learn it
Why quality matters to a business: reputation and brand image, customer loyalty, a higher price, fewer returns and less waste, meeting legal and safety standards, competitive advantage	Learn it

Fact	Status
Quality control: checking finished products at the end of production, usually by inspectors, so that faulty ones are found and removed before they reach customers	Learn it
Quality control is carried out by setting a standard, inspecting finished products (often a sample) against it, and scrapping or reworking those that fail	Learn it
Quality assurance: checking quality at every stage of production, usually by the workers themselves, to stop mistakes happening rather than finding them at the end	Learn it
Quality assurance is put in place by agreeing standards, using approved suppliers, training workers to check their own work at every stage, fixing the cause of faults and keeping records	Learn it

How to do it

We have tagged 22 questions on this topic (2021–2026), on Paper 1 and Paper 2. Each has one part on quality (the other parts are on other topics), so the counts add to 22.

Question type	Questions
Explain why quality is important to a business	6
Weigh up quality control and quality assurance and recommend one	4
Outline or explain advantages and disadvantages of quality control or quality assurance	4
Define quality control or quality assurance	4
Judge whether quality assurance or quality control is the better way to achieve quality	3
Identify methods to ensure quality	1

The mark scheme codes are **k** (knowledge: a correct point), **app** (application: a detail from the case), **an** (analysis: a developed consequence) and **eval** (evaluation: a justified judgement).

Part	Marks	What earns them
Paper 1 "Define"	2	a full definition; half = 1
Paper 1 "Identify"	1	short points; only the first ones asked for are marked each
Paper 1 "Outline" (c)	4	each: k + app
Paper 1 "Explain" (d)	6	each: k + app + an
Paper 1 (e) "Do you think ...?"	6	2 k + 2 an + 2 eval; general, so no app
Paper 2 (a) "Explain two ..."	8	each point (1) + up to 3 for a chain of explanation, one of them a case detail; when four points are asked, each point (1) + 1 explanation

Part	Marks	What earns them
Paper 2 (b) "Consider ... Which ...? Justify"	12	levels: applied discussion of every option, then a choice that says why the others were rejected

1. Explain why quality is important to a business (6 questions)

1. **Pick different reasons** from the table in "Understand it": reputation, loyalty, higher price, fewer returns and less waste, legal standards, competitive advantage.
2. **Develop each one** into a chain that ends with an effect on the business (sales, revenue, costs, profit, market share).
3. **Apply it** where the question names a business: use what it makes, who its customers are or its market (food that must be safe, a niche market, a new shop). Words copied from the question alone are not application.

Variations you will meet:

- **Paper 2 (a), two reasons with long chains:** why high quality matters for a flower business opening a new shop ([0450/22/O/N/25 Q4](#), part (a)). Each reason (1) plus up to 3 links of explanation, one of them about this business.
- **Paper 2 (a), four reasons, general:** why quality is important to a business ([0450/21/O/N/22 Q2](#), part (a)). No application marks, so each reason (1) + one clear explanation (1).
- **Paper 2 (a), four reasons, applied:** why high quality matters to a T-shirt business ([0450/22/F/M/21 Q4](#), part (a)). Each explanation must use the case; unapplied answers were held to 4 marks.
- **Paper 1 (c), outline two reasons:** for a food manufacturer making bread and breakfast cereals ([0450/11/M/J/25 Q2](#), part (c)), where meeting food safety laws is a good reason; for a photographer offering a high-quality service ([0450/12/M/J/21 Q1](#), part (c)), which shows services count too.
- **Paper 1 (d), explain two reasons:** for a sole trader making chocolate bars ([0450/12/F/M/25 Q2](#), part (d)): reason (k), a case detail (app), and the effect on sales or market share (an).

2. Weigh up quality control and quality assurance and recommend one (4 questions)

Paper 2 (b), 12 marks, levels. The case gives the business, its products and its workers.

1. **Quality control:** one or two advantages and one or two disadvantages, each explained and tied to the case (its product, its number of workers, how it produces).
2. **Quality assurance:** the same.
3. **Recommend one**, giving a reason from the case, and **say why the other was rejected**. Without the rejection, the answer cannot reach the top of Level 3. Either choice can earn full marks if it is justified.

Good case links: how many workers would need training (a large number makes quality assurance costly to start); how serious a fault would be in the product; whether the product is simple to check at the end; whether the business already has a good name for quality that it must protect.

Variations you will meet:

- **Quality control or quality assurance:** for a dessert maker with 8 kitchen workers (0450/22/F/M/26 Q1, part (b)); for a clothing maker using batch production (0450/23/O/N/24 Q3, part (b)); for a maker of protective hats planning to expand (0450/21/O/N/23 Q1, part (b)).
- **Three ways to achieve a high-quality service** at a hotel, and which is most effective (0450/22/F/M/22 Q2, part (b)): buying only from suppliers that guarantee quality (part of quality assurance), cleaners checking their own work (quality assurance) and chefs tasting food before it is served (a quality control check). Discuss how each way improves quality, with its costs, not why quality matters. "Sampling" here means chefs tasting food, not market research sampling.

3. Outline or explain advantages and disadvantages of quality control or quality assurance (4 questions)

All on Paper 1. Name the advantage or disadvantage (k), tie it to the business (app) and, for "explain", give the consequence (an). Use a **different** case detail for each point.

Variations you will meet:

- **Outline one advantage and one disadvantage of quality assurance** to a shoe maker using batch production (0450/12/M/J/25 Q1, part (c)): errors are caught during production of the shoes; but every worker must be trained, which costs money.
- **Outline two advantages of quality assurance** to a carpet maker with 60 employees (0450/11/M/J/23 Q1, part (c)): fewer faults at each stage, less waste and rework, teamwork among its employees, no need for inspectors. "Better quality", "more sales" or "lower cost" on its own was not credited: say how quality assurance causes it. Teamwork earns the mark only when it is linked to motivating workers.
- **Explain one advantage and one disadvantage of quality control** to a mobile phone maker with 130 employees (0450/11/O/N/22 Q1, part (d)): not every worker needs quality training, which keeps training costs down; but inspectors must be paid, or faulty phones are scrapped, which raises costs. It does not show where the fault happened.
- **Outline one advantage and one disadvantage of quality control** to a maker of wooden bookcases with one customer (0450/12/O/N/21 Q1, part (c)): faulty bookcases are less likely to reach its only customer; but scrapping or reworking bookcases is costly.

4. Define quality control or quality assurance (4 questions)

Paper 1, 2 marks. Two ideas for 2 marks: **what** is done (checking) and **when** (at the end, or at every stage). One idea earns 1. Reasons why a business does it, or examples, earn nothing.

- **Quality control** (0450/13/M/J/23 Q2, part (a); 0450/12/F/M/23 Q4, part (b)): checking finished products at the end of production, usually by inspectors, so that faulty ones are found and removed before they reach customers. "Checking the work" or "making sure goods are up to standard" is only half.

- **Quality assurance** (0450/12/O/N/25 Q1, part (a); 0450/11/M/J/21 Q4, part (b)): checking quality at every stage of production, usually by the workers themselves, to stop mistakes happening rather than finding them at the end. "Checking work" or "trying to prevent mistakes" alone is half; "checking at the end" defines quality control and scores nothing; "assuring quality" repeats the term.

5. Judge whether quality assurance or quality control is the better way to achieve quality (3 questions)

Paper 1 (e), 6 marks, general (no business named, so no application).

1. **Two points** (k): usually one about each method, or an advantage and a disadvantage of the method named.
2. **Develop each** (an): what it leads to (less rework, higher training costs, output not slowed).
3. **Decide** (eval, 2 marks): which is better and **why**, weighing one point against the other ("the training cost is paid once, but the savings from less rework continue"), or say **when** each suits a business.

Don't define the terms, don't write about why quality matters, and avoid **mirror points**: "quality assurance finds faults early" and "quality control finds faults late" is one point, credited once. A point that applies to both methods (such as a better reputation) is not credited.

Variations you will meet:

- **Is quality assurance the best way to achieve quality production?** (0450/11/O/N/24 Q4, part (e)): compare it with quality control as the other way.
- **Is quality control the best method for a manufacturing business?** (0450/12/O/N/23 Q2, part (e)): the same comparison, the other way round.
- **Is it better for a large manufacturer to use quality assurance rather than quality control?** (0450/13/M/J/22 Q4, part (e)): use the size in the judgement: training many workers costs a lot, but so does scrapping faulty products made in large numbers.

6. Identify methods to ensure quality (1 question)

Paper 1, 1 mark each: four methods a snack food maker could use to ensure the quality of its products (0450/12/F/M/21 Q3, part (c)). Name the method: quality control (inspecting finished products), quality assurance, training workers, using approved suppliers or better raw materials, and gathering customer feedback. Vague phrases such as "quality checks" or descriptions of an activity were not credited.

Worked examples

Example 1

PureSpring bottles mineral water. It has 45 production workers and 2 inspectors, who test a sample of the bottles at the end of the bottling line each day.

(a) Identify two things PureSpring would need to do to introduce quality assurance. [2]

(b) Outline the difference between quality control and quality assurance, with reference to PureSpring. [4]

(a) Train its 45 production workers to check their own work at each stage (1). Buy bottles and caps only from approved suppliers that meet agreed standards (1).

(b) Quality control is checking finished products at the end of production (k), which is what PureSpring's 2 inspectors do when they test a sample of bottles at the end of the line (app). Quality assurance is checking quality at every stage of production to stop mistakes happening (k): PureSpring would train its 45 production workers to check the water and the bottles at each stage of bottling (app).

Part (a) earns 1 mark per step (2 marks); part (b) earns k + app for each method (2 + 2 = 4). Total 6 marks.

Example 2

BrightPrint prints books for publishers. It prints 40 000 books a month and uses quality control: 3 inspectors check finished books, and 6% of books are found to be faulty and scrapped. The paper and ink for each book cost \$3. The managers are thinking about introducing quality assurance, which they expect would cut faulty books to 2%.

(a) Calculate the monthly cost of the paper and ink in the books BrightPrint scraps now, and how much this cost would fall with quality assurance. Show your working. [3]

(b) Explain two ways quality assurance could lower BrightPrint's costs. [6]

(a) Now: $40\,000 \times 6\% = 2400$ books scrapped, costing $2400 \times 3 = 7200$ dollars a month (1).

With quality assurance: $40\,000 \times 2\% = 800$ books scrapped, costing $800 \times 3 = 2400$ dollars a month (1).

Fall in cost = $7200 - 2400 = 4800$ dollars a month (1).

(b) Less waste (k). Workers check each stage, such as the printed pages before they are bound, so faults are found before more work is done on the book (an). The calculation shows scrapped paper and ink could fall from \$7200 to \$2400 a month (app).

Fewer inspectors needed (k). If its printing workers check their own work, BrightPrint may not need all 3 inspectors (app), so it could move some of them to other jobs and stop paying for end-of-line checks, which lowers labour costs (an).

Part (a) earns 1 mark for each correct step (3 marks); part (b) earns k + app + an for each way (3 + 3 = 6). Total 9 marks. The two analyses are different: one saves materials, the other saves wages.

Example 3

GreenLeaf grows tea and sells it to hotels and cafés. It has a reputation for high-quality tea and plans to launch a new range of herbal teas next year.

Explain two ways GreenLeaf's reputation for high quality could help it launch its new range of herbal teas. [8]

Way 1: customer loyalty (1). Hotels and cafés that already trust the quality of GreenLeaf's tea (1) are likely to try the new herbal teas instead of a rival's, without needing much persuading (1), so the new range gains sales quickly after launch (1).

Way 2: a higher price can be charged (1). Because buyers believe GreenLeaf's products are high quality, they see the herbal teas as worth more (1), so GreenLeaf can set a higher price than less well-known herbal teas (1), giving a higher profit margin on each box that helps pay back the cost of developing the range (1).

Each way earns 1 mark plus up to 3 for its chain of explanation, with at least one link about GreenLeaf (its hotel and café buyers, its tea): $4 + 4 = 8$.

Example 4

Do you think quality assurance is more important for a business providing a service than for a business making goods? Justify your answer. [6]

A service, such as a haircut or a taxi ride, is produced at the same moment the customer receives it, so it cannot be inspected at the end and thrown away if it is poor (k). The business must rely on trained staff getting it right first time, which is what quality assurance aims for; otherwise every mistake is seen by a customer and harms the business's reputation (an).

However, a business making goods can use quality control, inspecting finished products before they are sent out (k). Faulty goods can be caught and reworked before customers see them, although scrapping them at the end wastes materials, so manufacturers also save money by preventing faults (an).

I think quality assurance is more important for a service business, because it has no second chance: there is nothing to inspect before the customer experiences the service (eval). A manufacturer can at least fall back on end-of-line checks, so for it quality assurance mainly lowers costs, whereas for a service business it decides whether customers come back at all (eval).

This is a general question, so no business is named and there are no marks for application: $2\text{ k} + 2\text{ an} + 2\text{ eval} = 6$. The two points are about different situations, so they are not mirror points.

Example 5

Aqualine makes kitchen taps. It makes 8000 taps a month and has 40 production workers. 5% of its taps are returned by customers as faulty, and each return costs \$30 to replace and post. Its reputation has suffered. The managing director is choosing between two methods.

	Option 1: quality control	Option 2: quality assurance
What it involves	employ 2 inspectors at \$2000 a month each; inspectors find 4% of taps faulty, and each is reworked at a cost of \$10	train all 40 workers at \$300 each (once); pay each worker \$50 a month more
Taps returned by customers	1%	1%

Option 1: quality control	Option 2: quality assurance
Effect on output none	output 5% lower for the first 3 months while workers learn; each tap lost would have earned \$15 towards costs and profit

Consider the advantages and disadvantages of the two options. Which should Aqualine choose? Justify your answer, using calculations. **[12]**

Now, $8000 \times 5\% = 400$ taps are returned a month, costing $400 \times 30 = 12\,000$ dollars.

Option 1: quality control. Inspectors cost $2 \times 2000 = 4000$ dollars a month. They find $8000 \times 4\% = 320$ faulty taps, reworked for $320 \times 10 = 3200$ dollars. Returns fall to $8000 \times 1\% = 80$ taps, costing $80 \times 30 = 2400$ dollars. Monthly cost = $4000 + 3200 + 2400 = 9600$ dollars, or $9600 \times 12 = 115\,200$ dollars in the first year. It can start at once, with no fall in output and no training. But Aqualine keeps paying to rework 320 taps a month, because inspectors find faults without finding where they come from, and the workers still have no reason to take care.

Option 2: quality assurance. Training costs $40 \times 300 = 12\,000$ dollars once, and the extra pay is $40 \times 50 = 2000$ dollars a month. Returns cost \$2400 a month, as in Option 1. Lost output is $8000 \times 5\% = 400$ taps a month for 3 months, so $400 \times 15 \times 3 = 18\,000$ dollars. First-year cost = $12\,000 + 2000 \times 12 + 2400 \times 12 + 18\,000 = 82\,800$ dollars. Faults are stopped at the stage where they happen, so there is no rework bill, and workers given responsibility may be better motivated. But the first 3 months cost $12\,000 + 3 \times (2000 + 2400 + 6000) = 43\,200$ dollars, against $3 \times 9600 = 28\,800$ dollars for Option 1, and the plan fails if some workers do not take the checks seriously.

Recommendation. Aqualine should choose Option 2, quality assurance. Over the first year it costs $115\,200 - 82\,800 = 32\,400$ dollars less than quality control, and after the first 3 months it costs $2000 + 2400 = 4400$ dollars a month against \$9600, a saving of \$5200 every month. It also tackles the cause of the faults, which matters for a business whose reputation has already suffered. Option 1 is rejected because it is dearer every month after the third and leaves the faulty process in place, so the business would keep reworking taps for ever. Aqualine must make sure it has the cash for the higher costs in the first 3 months, and keep workers committed, for example by involving them in setting the standards.

Both options are discussed in context, with calculations, and the recommendation says why the other option was rejected: **Level 3** (9–12 marks). Choosing Option 1 could also score well, for example by arguing that Aqualine cannot afford the higher start-up costs or the lost output.

Common mistakes

- **Mixing up the two methods.** A common error in several years: describing inspectors or end-of-line checks as quality assurance, or checks at every stage as quality control. Remember: control = **end**, inspectors; assurance = **every stage**, workers.
- **Writing why quality matters when the question asks something else.** For a definition, the advantages of a method or which method is better, reasons why quality is important earn nothing.

- **Defining by repeating the term.** "Quality assurance is assuring quality" scores 0. Say what is checked, when, and by whom.
- **Thinking quality control removes every fault.** Often only a sample is checked, and faults are found after they have been made; it reduces the chance of faulty products reaching customers.
- **Thinking quality assurance means workers are watched all the time.** It means workers are trusted to check their own work.
- **Mirror points in the (e) question.** "Quality assurance finds faults early" and "quality control finds faults late" is one point. Make your second point about something different (training cost, speed of production, motivation).
- **Points that fit both methods.** "It improves the business's reputation" can be said of either method, so it does not show a difference between them.
- **Defining the terms in a (e) or (b) answer** instead of discussing them: definitions there earn nothing and use up time.
- **Listing advantages and disadvantages without saying what they mean for the business** in Paper 2 (b). Explain how each point affects this business's costs, sales or reputation.
- **The same case detail for both points**, or repeating one point in different words ("more sales" and "more customers"). Each is credited once.
- **Writing about why customers want quality** instead of why it matters to the business. End with sales, revenue, costs or profit.
- **Jumping straight to "more profit".** Show the steps: better reputation → more customers → more sales → more profit.
- **Copying words from the question as application.** "Its best-selling product" taken from the stem does not count; use a detail that adds something (what it makes, who buys it).
- **Vague methods.** "Quality checks" or "make sure it is good" is not a method; name quality control, quality assurance, training or approved suppliers.
- **Misreading "sampling".** In a quality question, sampling means testing some of the products (or a chef tasting food), not the market research method.

How to get the marks

- **Define** (2 marks): two ideas: the check **and** when it happens (end of production, or every stage). Leave out reasons and examples.
- **Identify** (1 mark each): short and different. Only your first answers are marked.
- **Outline** (Paper 1 (c), 4 marks): a point and a case detail each, such as "workers are trained to check their own work (k) on each carpet as it is made (app)". Use a different case detail for each point.
- **Explain** (Paper 1 (d), 6 marks): point, case detail, then the consequence: what it does to costs, output, sales or reputation.
- **Paper 1 (e)** (6 marks): general, so no case details. Two developed points, ideally one on each method, then a decision that weighs them and says why (or when).

- **Paper 2 (a)** (8 marks): for two reasons, a chain of up to three links after each point, with at least one link about the business; for four reasons, one clear explanation each.
- **Paper 2 (b)** (12 marks): advantages **and** disadvantages of **each** option, applied to the case; then a recommendation that gives a reason from the case and explains why the other option is worse **for this business**. A one-sided answer, or no rejection of the other option, stays below the top of Level 3.
- **"Justify your answer"** means a reason for the choice, not a summary. Good justifications compare: "training costs are paid once, but rework costs would continue every month".
- Use the exact terms **quality control** and **quality assurance**, **inspectors**, **every stage**, **rework**, **approved suppliers**.

Quick check

1. Is each of these quality control or quality assurance? (a) An inspector tests one in every 200 phone chargers as they come off the end of the line. (b) A baker weighs the dough for each tray of bread before it goes into the oven. (c) A hotel supervisor inspects each room after cleaning, before guests arrive. (d) A furniture maker buys wood only from suppliers who meet its agreed standards.
2. A factory makes 25 000 water bottles a month. Inspectors reject 4% of them, and each rejected bottle costs \$6 to rework. (a) Calculate the monthly cost of rework. (b) After quality assurance is introduced, rejects fall to 1.5%. Calculate the new monthly cost of rework and the saving.
3. Give three reasons why quality is important to a dental clinic, and for each say what it does to the clinic.
4. A student writes: "Quality assurance means managers watch the workers all the time." Explain what is wrong with this.
5. Give two reasons why a business making a simple product with mainly new, unskilled workers might choose quality control rather than quality assurance.

Answers

1. (a) Quality control: finished products are inspected at the end. (b) Quality assurance: a worker checks at a stage during production. (c) Quality control: the finished service is checked before the customer receives it. (d) Quality assurance: quality is built in from the materials onwards.
2. (a) $25\,000 \times 4\% = 1000$ bottles, so rework costs $1000 \times 6 = 6000$ dollars a month. (b) $25\,000 \times 1.5\% = 375$ bottles, so rework costs $375 \times 6 = 2250$ dollars a month; the saving is $6000 - 2250 = 3750$ dollars a month.
3. Any three, each with its effect. Good reputation: patients recommend it to others, so it gains new patients. Patient loyalty: patients return for check-ups, so revenue is steady. A higher price: patients pay more for treatment they trust, so the profit margin rises. Fewer complaints: treatments do not have to be redone free, so costs are lower. Meeting health and safety laws: the clinic avoids fines or being closed.
4. Quality assurance means each worker is trained and trusted to check their own work at every stage of production, not that they are watched. Responsibility for quality lies with the workers, which can raise their motivation.
5. A simple product is quick to check at the end, so a few inspectors can catch faults cheaply. Training many new, unskilled workers to check their own work would be expensive, and quality assurance would not work if they were not yet skilled or committed enough.

Past questions to try

- **0450/21/O/N/23 Q1:** part (b), choosing between quality control and quality assurance for a maker of protective hats.
- **0450/13/M/J/22 Q4:** part (e), whether a large manufacturer should use quality assurance rather than quality control.
- **0450/11/O/N/22 Q1:** part (d), one advantage and one disadvantage of quality control for a mobile phone maker.
- **0450/12/F/M/25 Q2:** part (d), two reasons why quality is important to a chocolate maker.