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| 01 | A | B | C | D | E |
| 02 | A | B | C | D | E |
| 03 | A | B | C | D | E |
| 04 | A | B | C | D | E |
| 05 | A | B | C | D | E |
| 06 | A | B | C | D | E |
| 07 | A | B | C | D | E |
| 08 | A | B | C | D | E |
| 09 | A | B | C | D | E |
| 10 | A | B | C | D | E |
| 11 | A | B | C | D | E |
| 12 | A | B | C | D | E |
| 13 | A | B | C | D | E |

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|----|---|---|---|---|---|
| 14 | A | B | C | D | E |
| 15 | A | B | C | D | E |
| 16 | A | B | C | D | E |
| 17 | A | B | C | D | E |
| 18 | A | B | C | D | E |
| 19 | A | B | C | D | E |
| 20 | A | B | C | D | E |
| 21 | A | B | C | D | E |
| 22 | A | B | C | D | E |
| 23 | A | B | C | D | E |
| 24 | A | B | C | D | E |
| 25 | A | B | C | D | E |
| 26 | A | B | C | D | E |

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|----|---|---|---|---|---|
| 27 | A | B | C | D | E |
| 28 | A | B | C | D | E |
| 29 | A | B | C | D | E |
| 30 | A | B | C | D | E |
| 31 | A | B | C | D | E |
| 32 | A | B | C | D | E |
| 33 | A | B | C | D | E |
| 34 | A | B | C | D | E |
| 35 | A | B | C | D | E |
| 36 | A | B | C | D | E |
| 37 | A | B | C | D | E |
| 38 | A | B | C | D | E |
| 39 | A | B | C | D | E |

PRACTICE QUESTIONS

American Society For Quality (ASQ)

# CQEZH2

Certified Quality Engineer

EDITION

Demo

QUESTIONS

9

FORMAT

Limited Edition PDF

# Before you begin

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## What this is

9 practice questions for American Society For Quality (ASQ) CQEZH2 , each with its answer key and an explanation. Answer a question before you read its key — the explanation is worth more once you have committed.

## If something looks wrong

Send us three things and we will check it:

- the exam code, CQEZH2
- the question number
- the email address on your order

Write to **support@mometrix.net**. We reply within one business day.

**QUESTION 1**

SINGLE CHOICE

According to ASQ's definition of quality, which of the following statements best characterizes 'quality' as the term is used in modern quality management?

- ☐ A Quality is the degree to which a product conforms to its engineering specifications.
- ☒ B Quality is the degree to which a product meets or exceeds the expectations of its customers.
- ☐ C Quality is the degree to which a product is free from defects as measured by inspection.
- ☐ D Quality is the degree to which a product meets the legal and regulatory requirements of its market.

**ANSWER B**

**WHY** ASQ defines quality as 'the totality of characteristics of an entity that bear on its ability to satisfy stated or implied needs' and, in customer-driven terms, as the degree to which a product or service meets or exceeds customer expectations. While conformance to specifications is a part of quality, ASQ emphasizes meeting customer needs and expectations, not just internal specifications or regulatory compliance.

**QUESTION 2**

SINGLE CHOICE

A company certified to ISO 9001 wants to demonstrate that its quality management system also addresses environmental responsibility. Which ISO standard should the company pursue?

- ☒ A ISO 14001
- ☐ B ISO 45001
- ☐ C ISO 27001
- ☐ D ISO 50001

**ANSWER A**

**WHY** ISO 14001 is the international standard for Environmental Management Systems (EMS). ISO 45001 covers occupational health and safety, ISO 27001 covers information security, and ISO 50001 covers energy management. ISO 14001 is the correct choice for environmental responsibility.

**QUESTION 3** SINGLE CHOICE

A manufacturing engineer identifies that a machine is producing parts outside of specification. The cost to repair the machine and the lost production time are examples of which category of quality cost?

- ☐ A External failure cost
- ☐ B Appraisal cost
- ☒ C Internal failure cost
- ☐ D Prevention cost

**ANSWER C**

**WHY** Internal failure costs are incurred when defects are discovered before the product reaches the customer. This includes scrap, rework, re-inspection, and lost production time due to defects. External failure costs occur after the product reaches the customer (warranty claims, returns, recalls). Appraisal costs are for inspection and testing, and prevention costs are for activities to prevent defects (training, quality planning).

**QUESTION 4** SINGLE CHOICE

A quality engineer is constructing an X-bar control chart. Which of the following is the correct formula for the Upper Control Limit (UCL)?

- ☒ A  $UCL = \bar{X} + A_2 * \bar{R}$
- ☐ B  $UCL = \bar{X} + 3 * \sigma$
- ☐ C  $UCL = \bar{R} + D_4$
- ☐ D  $UCL = \bar{X} + A_2 * \bar{s}$

**ANSWER A**

**WHY** For an X-bar chart with subgroup size n, the Upper Control Limit is calculated as  $UCL = \bar{X} + A_2 * \bar{R}$ , where  $A_2$  is a constant that depends on the subgroup size,  $\bar{X}$  is the grand average, and  $\bar{R}$  is the average range. When using standard deviation (s) instead of range,  $A_2$  is replaced by  $A_3$ .  $UCL = \bar{R} + D_4$  is the formula for the R chart upper control limit.

**QUESTION 5**

MULTIPLE CHOICE

Which of the following are primary stakeholders in a quality management system? (Choose two.)

- ☒ **A** Customers
- ☒ **B** Suppliers
- ☐ **C** Competitors
- ☐ **D** Employees
- ☐ **E** Government regulators only

**ANSWER A - B**

**WHY** Primary stakeholders in a quality management system include customers (who receive the product/service), suppliers (who provide inputs), employees (who produce the product/service), and shareholders/owners. While competitors and regulators exist in the business environment, customers and suppliers are universally recognized as primary internal/external stakeholders that the QMS must address per ISO 9001 and ASQ frameworks.

**QUESTION 6**

SINGLE CHOICE

Which category of quality cost would include the salary of a quality inspector who performs final inspection of finished goods?

- ☐ **A** Prevention cost
- ☒ **B** Appraisal cost
- ☐ **C** Internal failure cost
- ☐ **D** External failure cost

**ANSWER B**

**WHY** Appraisal costs are the costs of measuring, evaluating, or auditing products, components, and purchased materials to ensure they conform to specifications. This includes the cost of inspection, testing, and the personnel who perform these activities. Prevention costs are for activities to prevent defects, internal failure costs are for defects found before delivery, and external failure costs are for defects found after delivery.

**QUESTION 7**

SINGLE CHOICE

In a full factorial design with 3 factors, each at 2 levels, how many experimental runs are required?

- ☐ A 4
- ☐ B 6
- ☒ C 8
- ☐ D 9

**ANSWER C**

**WHY** A full factorial design  $k$  factors  $\times$   $m$  levels requires  $m^k$  runs. With 3 factors at 2 levels, this is  $2^3 = 8$  runs. This is a  $2^3$  full factorial design commonly used in DOE.

**QUESTION 8**

SINGLE CHOICE

A process has a specification width of 0.60 mm (USL - LSL) and a process standard deviation of 0.10 mm. What is the process capability index (Cp)?

- ☐ A 0.50
- ☒ B 1.00
- ☐ C 1.50
- ☐ D 2.00

**ANSWER B**

**WHY** The process capability index Cp is calculated as  $(USL - LSL) / (6 * \sigma)$ . With a specification width of 0.60 mm and  $\sigma = 0.10$  mm:  $Cp = 0.60 / (6 * 0.10) = 0.60 / 0.60 = 1.00$ . A Cp of 1.00 indicates the process spread equals the specification spread.

**QUESTION 9**

SINGLE CHOICE

In lean manufacturing, the term 'muda' refers to which of the following?

- ☒ **A** Waste or any activity that consumes resources without creating value for the customer
- ☐ **B** A type of visual management system used on the shop floor
- ☐ **C** A pull-based production scheduling method
- ☐ **D** The continuous improvement philosophy

**ANSWER A**

**WHY** In the Toyota Production System and lean manufacturing, 'muda' is the Japanese term for waste — any activity that consumes resources without creating value for the customer. Taiichi Ohno identified seven original wastes (transport, inventory, motion, waiting, overproduction, over-processing, defects), with an eighth (unutilized talent) added later. 'Kanban' is a pull-based scheduling system, 'Kaizen' is continuous improvement, and visual management is a separate lean tool.