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39	A	B	C	D	E

PRACTICE QUESTIONS

American Society For Quality (ASQ)

SBBCH

Certified Six Sigma Black Belt (PBT)

EDITION

Demo

QUESTIONS

9

FORMAT

Limited Edition PDF

Before you begin

What this is

9 practice questions for American Society For Quality (ASQ) SBBCH , 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, SBBCH
- the question number
- the email address on your order

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

QUESTION 1

SINGLE CHOICE

Which of the following best describes the primary purpose of Six Sigma as defined in the ASQ Black Belt Body of Knowledge?

- ☒ **A** To reduce variation and defects in processes to a level of 3.4 defects per million opportunities (DPMO)
- ☐ **B** To eliminate all waste from a process using value-stream mapping
- ☐ **C** To implement a pull-based production system across the entire enterprise
- ☐ **D** To replace existing quality management systems with a single international standard

ANSWER A

WHY Six Sigma's defining purpose, as stated in the ASQ CSSBB Body of Knowledge, is to reduce process variation so that the long-term defect rate reaches 3.4 DPMO. Lean focuses on waste elimination, pull systems are a lean/just-in-time concept, and Six Sigma is a complementary discipline rather than a replacement for standards such as ISO 9001.

QUESTION 2

SINGLE CHOICE

According to the ASQ role definitions, which responsibility is most characteristic of a Six Sigma Champion?

- ☒ **A** Facilitating team meetings and removing barriers to project success
- ☐ **B** Coaching Black Belts on the use of statistical tools during the Analyze phase
- ☐ **C** Owning the project on a day-to-day basis and collecting process data
- ☐ **D** Working full time on a single project to deliver measurable financial results

ANSWER A

WHY A Champion is a senior leader who sponsors and removes organizational barriers for Six Sigma projects, but does not run the project day to day (Black Belt), does not coach tool usage (Master Black Belt), and is not the project owner. Facilitating team progress and clearing obstacles is the defining Champion behavior.

QUESTION 3

SINGLE CHOICE

A Six Sigma team collects samples of size $n = 36$ from a process whose individual measurements are highly skewed. As n increases toward 36, what does the Central Limit Theorem lead the team to expect about the distribution of the sample means?

- ☒ **A** It will approach a normal distribution regardless of the shape of the underlying population
- ☐ **B** It will retain the same skewness as the underlying population
- ☐ **C** It will approach a uniform distribution between the minimum and maximum sample values
- ☐ **D** It will approach an exponential distribution with a rate equal to the population mean

ANSWER A

WHY The Central Limit Theorem states that the sampling distribution of the sample mean approaches a normal distribution as sample size grows, regardless of the underlying population distribution, provided the population has a finite variance. With $n = 36$ the team can reasonably treat the sample mean as approximately normal.

QUESTION 4

SINGLE CHOICE

In a Gage R&R study, what percentage of total variation contributed by the measurement system is generally considered acceptable for a Six Sigma Black Belt project?

- ☒ **A** Less than 10%
- ☐ **B** Between 10% and 30%
- ☐ **C** Between 30% and 50%
- ☐ **D** Greater than 50%

ANSWER A

WHY AIAG MSA guidance, which ASQ Black Belts are expected to know, classifies Gage R&R results as: under 10% generally acceptable, 10-30% may be acceptable depending on cost/use, and over 30% usually unacceptable. A Six Sigma project typically targets less than 10% study variation.

QUESTION 5

SINGLE CHOICE

In the DMAIC framework, during which phase does a Black Belt primarily develop a data-collection plan and validate the measurement system?

- ☐ A Define
- ☒ B Measure
- ☐ C Analyze
- ☐ D Improve

ANSWER B

WHY The Measure phase is dedicated to establishing what to measure, developing the data-collection plan, and validating the measurement system (for example through Gage R&R). Define establishes the project scope; Analyze investigates root causes; Improve develops and pilots solutions.

QUESTION 6

SINGLE CHOICE

A Black Belt wants to study the effects of three two-level factors on a response with as few runs as possible while still estimating all main effects and interactions. Which design is most appropriate?

- ☒ A Full factorial design with 2^3 runs
- ☐ B One-half fractional factorial design with 2^{3-1} runs
- ☐ C Central composite response surface design
- ☐ D Plackett-Burman screening design

ANSWER A

WHY With only three two-level factors, a full $2^3 = 8$ run factorial is the most efficient way to estimate all main effects and interactions without aliasing. Fractional factorials are used when the number of factors is large, Plackett-Burman is a screening design that aliases interactions with main effects, and central composite designs are response-surface designs requiring more runs.

QUESTION 7

SINGLE CHOICE

Which of the following is a defining characteristic of a lean enterprise according to the ASQ Black Belt Body of Knowledge?

- ☒ **A** It uses value-stream mapping to identify and eliminate non-value-added activities
- ☐ **B** It depends on large buffer inventories to protect the process from variation
- ☐ **C** It pushes product through each process step based on forecast demand
- ☐ **D** It measures success primarily through overall equipment effectiveness rather than takt time

ANSWER A

WHY A lean enterprise is characterized by the relentless identification and elimination of waste (muda) using tools such as value-stream mapping. Lean relies on pull systems and small inventories, not large buffers, and uses takt time to pace production.

QUESTION 8

SINGLE CHOICE

Why is project documentation considered a critical element of a Six Sigma Black Belt project, beyond simple record-keeping?

- ☒ **A** It enables replication of improvements, supports communication with stakeholders, and provides evidence of results for sustainment
- ☐ **B** It satisfies the auditor's requirement for ISO 9001 certification
- ☐ **C** It replaces the need for statistical software by archiving raw data
- ☐ **D** It allows the project to be closed without management review

ANSWER A

WHY ASQ emphasizes that documentation is the foundation for replicating successes, sustaining gains, communicating with sponsors, and demonstrating that DMAIC was followed rigorously. ISO certification, replacing software, or bypassing management review are not the primary reasons.

QUESTION 9

MULTIPLE CHOICE

Which of the following are typically included in a Six Sigma project charter? (Choose two.)

- ☒ **A** A clear problem statement
- ☐ **B** The team's favorite brainstorming technique
- ☒ **C** The project scope and boundaries
- ☐ **D** A list of every individual involved in the value stream

ANSWER **A - C**

WHY A project charter typically contains a clear problem/opportunity statement, a business case, the project scope and boundaries, goals, milestones, and team roles. The team's preferred brainstorming tool is not a charter element, and listing every individual in the value stream is overly detailed for a charter.