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#1 Process Certification Guide

ASQ CSSGB

ASQ SIX SIGMA GREEN BELT CERTIFICATION QUESTIONS & ANSWERS

Exam Summary – Syllabus – Questions

CSSGB

ASQ Certified Six Sigma Green Belt (CSSGB)

110 Questions Exam – 550/750 Cut Score – Duration of 270 minutes

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Know Your CSSGB Certification Well:

The CSSGB is best suitable for candidates who want to gain knowledge in the ASQ Business Process Improvement. Before you start your CSSGB preparation you may struggle to get all the crucial Six Sigma Green Belt materials like CSSGB syllabus, sample questions, study guide.

But don't worry the CSSGB PDF is here to help you prepare in a stress free manner.

The PDF is a combination of all your queries like-

- What is in the CSSGB syllabus?
- How many questions are there in the CSSGB exam?
- Which Practice test would help me to pass the CSSGB exam at the first attempt?

Passing the CSSGB exam makes you ASQ Certified Six Sigma Green Belt (CSSGB). Having the Six Sigma Green Belt certification opens multiple opportunities for you. You can grab a new job, get a higher salary or simply get recognition within your current organization.

ASQ CSSGB Six Sigma Green Belt Certification Details:

Exam Name	ASQ Certified Six Sigma Green Belt
Exam Code	CSSGB
Exam Fee	USD ASQ MEMBERS - $338 NON-MEMBERS - $438 RETAKES - $238
Exam Duration	270 Minutes
Number of Questions	110
Passing Score	550/750
Format	Multiple Choice Questions
Books / Trainings	**Certified Six Sigma Green Belt Certification Preparation** **The Certified Six Sigma Green Belt Handbook, Second Edition**
Schedule Exam	**Book Your Exam**
Sample Questions	**ASQ Six Sigma Green Belt Exam Sample Questions and Answers**
Practice Exam	**ASQ Certified Six Sigma Green Belt (CSSGB) Practice Test**

CSSGB Syllabus:

I. Overview: Six Sigma and the Organization (11 Questions)	
A. Six Sigma and Organizational Goals	1. Value of Six Sigma - Recognize why organizations use Six Sigma, how they apply its philosophy and goals, and the evolution of Six Sigma from quality leaders such as Juran, Deming, Shewhart, Ishikawa, and others. (Understand) 2. Organizational goals and Six Sigma projects - Identify the linkages and supports that need to be established between a selected Six Sigma project and the organization's goals including SMART goals, and describe how process inputs, outputs, and feedback at all levels can influence the organization as a whole. (Understand) 3. Organizational drivers and metrics - Recognize key business drivers (profit, market share, customer satisfaction, efficiency, product differentiation, key performance indicators (KPIs)) for all types of organizations. Understand how key metrics and scorecards are developed and how they impact the entire organization. (Understand)
B. Lean Principles in the Organization	1. Lean concepts - Define and describe lean concepts such as theory of constraints, value chain, flow, takt time, just-in-time (JIT), Gemba, spaghetti diagrams, and perfection. (Apply) 2. Value-stream mapping - Use value-stream mapping to identify value-added processes and steps or processes that produce waste, including excess inventory, unused space, test inspection, rework, transportation, and storage. (Understand)
C. Design for Six Sigma (DFSS) Methodologies	1. Road maps for DFSS - Distinguish between DMADV (define, measure, analyze, design, verify) and IDOV (identify, design, optimize, verify), and recognize how they align with DMAIC. Describe how these methodologies are used for improving the end product or process during the design (DFSS) phase. Understand how verification and validation are used to compare results against stated goals. (Understand) 2. Basic failure mode and effects analysis (FMEA) - Use FMEA to evaluate a process or product and determine what might cause it to fail and the effects that failure could have. Identify and use scale criteria, calculate the risk priority number (RPN), and analyze the results. (Analyze) 3. Design FMEA and process FMEA - Define and distinguish between these two uses of FMEA. (Apply)

II. Define Phase (20 Questions)	
A. Project Identification	1. Project selection - Describe the project selection process and what factors should be considered in deciding whether to use the Six Sigma DMAIC methodology or another problem-solving process. (Understand) 2. Process elements - Define and describe process components and boundaries. Recognize how processes cross various functional areas and the challenges that result for process improvement efforts. (Analyze) 3. Benchmarking - Understand various types of benchmarking, including competitive, collaborative, and best practices. (Understand) 4. Process inputs and outputs - Identify process input and output variables and evaluate their relationships using the supplier, inputs, process, output, customer (SIPOC) model. (Analyze) 5. Owners and stakeholders - Identify the process owners and other stakeholders in a project. (Apply)
B. Voice of the Customer (VoC)	1. Customer identification - Identify the internal and external customers of a project, and what effect the project will have on them. (Apply) 2. Customer data - Collect feedback from customers using surveys, focus groups, interviews, and various forms of observation. Identify the key elements that make these tools effective. Review data collection questions to eliminate vagueness, ambiguity, and any unintended bias. (Apply) 3. Customer requirements - Use quality function deployment (QFD), Critical to X (CTX when 'X' can be quality, cost, safety, etc.), Critical to Quality tree (CTQ), and Kano model to translate customer requirements statements into product features, performance measures, or opportunities for improvement. Use weighting methods as needed to amplify the importance and urgency of different kinds of input; telephone call vs. survey response; product complaint vs. expedited service request. (Apply)
C. Project Management Basics	1. Project methodology - Define and apply agile and top-down project management methods. (Apply) 2. Project charter - Define and describe elements of a project charter and develop

	a problem statement that includes baseline data or current status to be improved and the project's goals. (Apply) 3. Project scope - Help define the scope of the project using process maps, Pareto charts, and other quality tools. (Apply) 4. Project metrics - Help develop primary metrics (reduce defect levels by x-amount) and consequential metrics (the negative effects that making the planned improvement might cause). (Apply) 5. Project planning tools - Use work breakdown structures (WBS), Gantt charts, critical path method (CPM), program evaluation and review technique (PERT) charts, and toll-gate reviews to plan projects and monitor their progress. (Apply) 6. Project documentation - Describe the types of data and input needed to document a project. Identify and help develop appropriate presentation tools (storyboards, spreadsheet summary of results) for phase reviews and management updates. (Apply) 7. Project risk analysis and management - Describe the elements of project risk analysis, including feasibility, potential impact, risk priority number (RPN), and risk management. Identify the potential effect risk can have on project goals and schedule, resources (materials and personnel), business continuity planning, costs and other financial measures, and stakeholders. (Understand) 8. Project closure - Review with team members and sponsors the project objectives achieved in relation to the charter and ensure that documentation is completed and stored appropriately. Identify lessons learned and inform other parts of the organization about opportunities for improvement. (Apply)
D. Management and Planning Tools	- Define, select, and apply these tools: 1) affinity diagrams, 2) interrelationship digraphs, 3) tree diagrams, 4) prioritization matrices, 5) matrix diagrams, 6) process decision program charts (PDPC), 7) activity network diagrams, and 8) SWOT analysis. (Apply)
E. Business Results for Projects	1. Process performance - Calculate process performance metrics such as defects per unit (DPU), rolled throughput yield (RTY), cost of poor quality (CoPQ), defects per million opportunities (DPMO), sigma levels, and process capability indices. Track process performance measures to drive project decisions. (Analyze) 2. Communication - Define and describe communication techniques used in organizations: top-down, bottom-up, and horizontal. (Apply)

F. Team Dynamics and Performance	1. Team stages and dynamics - Define and describe the stages of team evolution, including forming, storming, norming, performing, adjourning, and recognition. Identify and help resolve negative dynamics such as overbearing, dominant, or reluctant participants, the unquestioned acceptance of opinions as facts, groupthink, feuding, floundering, the rush to accomplishment, attribution, discounts, digressions, and tangents. (Understand) 2. Team roles and responsibilities - Use tools, such as RACI, to describe and define the roles and responsibilities of participants on six sigma and other teams, including black belt, master black belt, green belt, champion, executive, coach, facilitator, team member, sponsor, and process owner. (Apply) 3. Team tools and decision-making concepts - Define and apply team tools such as brainstorming, and decision-making concepts such as nominal group technique, and multi-voting. (Apply) 4. Team Communication - Identify and use appropriate communication methods (both within the team and from the team to various stakeholders) to report progress, conduct reviews, and support the overall success of the project. (Apply)
III. Measure Phase (20 Questions)	
A. Process Analysis and Documentation	- Develop process maps and review written procedures, work instructions, and flowcharts to identify any gaps or areas of the process that are misaligned. (Create)
B. Probability and Statistics	1. Basic probability concepts - Describe and interpret basic probability concepts: independent events, mutually exclusive events, multiplication rules, permutations, and combinations. (Understand) 2. Central limit theorem - Define the central limit theorem and describe its significance in relation to confidence intervals, hypothesis testing, and control charts. (Understand)
C. Statistical Distributions	- Define and describe various distributions as they apply to statistical process control and probability: normal, binomial, Poisson, chi square, Student's t, and F. (Understand)
D. Collecting and Summarizing Data	1. Types of data and measurement scales - Identify and classify continuous (variables) and discrete (attributes) data. Describe and define nominal, ordinal, interval, and ratio measurement scales. (Analyze) 2. Sampling and data collection plans and methods - Define and apply various sampling methods (random and

	stratified) and data collection methods (check sheets and data coding). Prepare data collection plans that include gathering data and performing quality checks (e.g., minimum/maximum values, erroneous data, null values). (Apply) 3. Descriptive statistics - Define, calculate, and interpret measures of dispersion and central tendency. Develop and interpret frequency distributions and cumulative frequency distributions. (Evaluate) 4. Graphical methods - Construct and interpret diagrams and charts that are designed to communicate numerical analysis efficiently, including scatter diagrams, normal probability plots, histograms, stem-and-leaf plots, box-and-whisker plots. (Create)
E. Measurement System Analysis (MSA)	- Calculate, analyze, and interpret measurement system capability using gauge repeatability and reproducibility (GR&R) studies, measurement correlation, bias, linearity, percent agreement, and precision/tolerance (P/T). (Evaluate)
F. Process and Performance Capability	1. Process performance vs. process specifications - Define and distinguish between natural process limits and specification limits, and calculate process performance metrics. (Evaluate) 2. Process capability studies - Define, describe, and conduct process capability studies, including identifying characteristics, specifications, and tolerances, and verifying stability and normality. (Evaluate) 3. Process capability (Cp, Cpk) and process performance (Pp, Ppk) indices - Describe the relationship between these types of indices. Define, select, and calculate process capability and process performance. Describe when Cpm measures can be used. Calculate the sigma level of a process. (Evaluate) 4. Short-term vs. long-term capability and sigma shift - Describe the assumptions and conventions that are appropriate to use when only short-term data are used. Identify and calculate the sigma shift that occurs when long- and short-term data are compared. (Evaluate)
IV. Analyze Phase (18 Questions)	
A. Exploratory Data Analysis	1. Multi-vari studies - Select appropriate sampling plans to create multi-vari study charts and interpret the results for positional, cyclical, and temporal variation. (Create) 2. Correlation and linear regression - Describe the difference between correlation and causation. Calculate the correlation coefficient and linear regression and

	interpret the results in terms of statistical significance (p-value). Use regression models for estimation and prediction. (Evaluate)
B. Hypothesis Testing	1. Basics - Distinguish between statistical and practical significance. Determine appropriate sample sizes and develop tests for significance level, power, and type I and type II errors. (Apply) 2. Tests for means, variances, and proportions - Conduct hypothesis tests to compare means, variances, and proportions (paired-comparison t-test, F-test, analysis of variance (ANOVA), chi square) and interpret the results. (Analyze)
C. Additional analysis methods	1. Gap analysis - Analyze scenarios to identify performance gaps and compare current and future states using predefined metrics. (Analyze) 2. Root cause analysis - Use cause and effect diagrams, relational matrices, 5 Whys, fault tree analysis, and other problem-solving tools to identify the true cause of a problem. (Analyze)
V. Improve Phase (16 Questions)	
A. Design of Experiments (DoE)	1. Basic terms - Define and describe terms such as independent and dependent variables, factors and levels, responses, treatments, errors, repetition, blocks, randomization, effects, and replication. (Understand) 2. DOE graphs and plots - Interpret main effects analysis and interaction plots. (Apply)
B. Implementation planning	- Apply implementation planning by using proof of concepts, try-storming simulations, and pilot tests. (Apply)
C. Lean Tools	1. Waste elimination - Select and apply tools and techniques for eliminating or preventing waste, including pull systems, kanban, 5S, standard work, and poka-yoke. (Apply) 2. Cycle-time reduction - Use various techniques to reduce cycle time (continuous flow, setup reduction, single-minute exchange of dies (SMED)). (Analyze) 3. Kaizen and kaizen blitz - Define and distinguish between these two methods and apply them in various situations. (Apply)

VI. Control Phase (15 Questions)	
A. Statistical Process Control (SPC)	1. SPC Basics - Describe the theory and objectives of SPC, including measuring and monitoring process performance for both continuous and discrete data. Define and distinguish between common and special cause variation and how these conditions can be deduced from control chart analysis. (Analyze) 2. Rational subgrouping - Define and describe how rational subgrouping is used. (Understand) 3. Control charts - Identify, select, construct, and use control charts: $\bar{x}$ – R , $\bar{x}$ – s, individual and moving range (ImR or XmR), median, p, np, c, and u. (Apply)
B. Sustain improvements	1. Control plan - Assist in developing and implementing a control plan to document and monitor the process. (Apply) 2. Document control - Understand document control and its role in controlling and sustaining improvements. (Understand) 3. Training plans - Develop training plans to implement and sustain improvements. (Apply) 4. Audits - Define first-, second-, and third-party audits. (Remember) 5. Plan-do-check-act (PDCA) - Apply and distinguish between the steps of plan-do-check-act (PDCA). (Apply)
C. Lean Tools for Process Control	1. Total productive maintenance (TPM) - Define the elements of TPM, including use of predictive maintenance and describe how they can be used to control the improved process. (Understand) 2. Visual factory - Define the elements of a visual factory (Andon, Jidoka) and describe how they can be used to control the improved process. (Understand)

ASQ CSSGB Sample Questions:

Question: 1

Which of the following tools is used extensively in quality function deployment (QFD)?

Please choose the correct answer.

a) Affinity diagram
b) Matrix diagram
c) Cause and effect diagram
d) Activity network diagram

Answer: b

Question: 2

Which of the following control charts is used to monitor discrete data?

Please choose the correct answer.

a) p
b) I & mR
c) X
d) X and R

Answer: a

Question: 3

Positional, cyclical, and temporal variations are most commonly analyzed in

Please choose the correct answer.

a) SPC charts
b) multi-vari charts
c) cause and effect diagrams
d) run charts

Answer: b

Question: 4

When an inspection process rejects conforming product, what type of error is being made?

Please choose the correct answer.

a) α
b) β
c) σ
d) H0

Answer: a

Question: 5

Which of the following is a commonly accepted level for alpha risk?

Please choose the correct answer.

a) 0.05
b) 0.50
c) 0.70
d) 0.95

Answer: a

Question: 6

For a normal distribution, two standard deviations on each side of the mean would include what percentage of the total population?

Please choose the correct answer.

a) 68%
b) 47%
c) 34%
d) 95%

Answer: d

Question: 7

Which of the following tools is used to translate broad requirements into specific requirements?

Please choose the correct answer.

a) A quality control plan
b) The theory of constraints (TOC)
c) A critical to quality (CTQ) tree
d) A process flowchart

Answer: c

Question: 8

Which of the following is an example of mistake-proofing?

Please choose the correct answer.

a) Using x and R chart to prevent errors
b) Using 100% inspection to detect and contain defects
c) Using color coding as an error signal
d) Having the team that created the errors repair them

Answer: c

Question: 9

Which of the following measures is used to show the ratio of defects to units?

Please choose the correct answer.

a) DPU
b) DPO
c) DPMO
d) PPM

Answer: a

Question: 10

A measurement system analysis is designed to assess the statistical properties of

Please choose the correct answer.

a) gage variation
b) process performance
c) process stability
d) engineering tolerances

Answer: a

Study Guide to Crack ASQ Six Sigma Green Belt CSSGB Exam:

- Getting details of the CSSGB syllabus, is the first step of a study plan. This pdf is going to be of ultimate help. Completion of the syllabus is must to pass the CSSGB exam.
- Making a schedule is vital. A structured method of preparation leads to success. A candidate must plan his schedule and follow it rigorously to attain success.
- Joining the ASQ provided training for CSSGB exam could be of much help. If there is specific training for the exam, you can discover it from the link above.
- Read from the CSSGB sample questions to gain your idea about the actual exam questions. In this PDF useful sample questions are provided to make your exam preparation easy.
- Practicing on CSSGB practice tests is must. Continuous practice will make you an expert in all syllabus areas.

Reliable Online Practice Test for CSSGB Certification

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