

The Certification Journey

Lessons Learned and Shared

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What Will Be Covered

- ASQ Certification Basics
- Certification Selection
- Preparing For Success
- The Day Of
- Results and Recertification
- Question and Answers

ASQ Certification Basics

- [Certification Handbook](#), *the details explained*
- [Certification vs. Certificate](#), *there is a difference*
- [Body of Knowledge \(BOK\)](#), *17 certifications*
- [Exam Frequency](#), *twice a year or so they say*
- [Recertification](#), *12 of 17 require this*
- [Optimizing the Investment](#), *doing more with less*
- [Value of the Achievement](#), *satisfying many needs*

Reference Materials

- Proctor has final authority on the admissibility
- Exams are open book
 - Exception CMQ/OE Constructed Response Portion
- Personally generated materials are allowed
- No sharing of reference materials/calculators
- Each examinee must have materials reviewed
- Absolutely no collections of questions/answers

Reference Materials

- Calculator Policy:
 - Any silent, hand-held, battery-operated calculator without an alphabetic keyboard will be permitted, however, all programmable memory must be cleared before enter room
 - Texas Instruments TI-89 or similar calculators are **ABSOLUTELY NOT** allowed due to alphabetic keyboards
 - Examination written so a simple calculator will be sufficient to perform all calculations
 - **The use of laptops or palm pilots is not allowed**

Certification Selection

- ASQ offers 17 certifications
- Review the brief descriptions
 - note the education and experience requirements
- Each has a specific body of knowledge
 - Compare the stated expectations
- Gain an advantage over your competition
- Understand the application process

Find the Right Certification for You

Recommended ASQ Certification Order by Career Track

Type QA:

Technical

Leadership

Inspector

Technician

Engineer

Auditor

Manager

Software
Engineer

CQI

CQI

CQT

CQIA

CQIA

CQIA

CQT

CQT

CSSGB

CQT

CQT

CQPA

CSSGB

CCT

CQPA

CQPA

CQA

CCT

CSSBB

CQA

CQA

CSQE

CRE

CBA/CHA/CPGP

CBA/CHA/CPGP

CQE

CMQ/OE

Body Of Knowledge

- Included in body of knowledge are explanations (subtext) and cognitive levels for each topic or subtopic in the test
 - designed to help candidates prepare for the exam
 - identify specific testable content within each topic
 - refers to highest cognitive level at which the topic is tested
- Except where specified;
 - subtext not intended to limit the subject or be all-inclusive
 - intended to clarify how topics are related to certification

Levels of Cognition

based on Bloom's Taxonomy – Revised (2001)

Remember: Recall or recognize terms, definitions, facts, ideas, materials, patterns, sequences, methods, principles, etc.

Understand: Read and understand descriptions, communications, reports, tables, diagrams, directions, regulations, etc.

Apply: Know when and how to use ideas, procedures, methods, formulas, principles, theories, etc.

Analyze: Break down information into its constituent parts and recognize their relationship to one another and how they are organized; identify sublevel factors or salient data from a complex scenario.

Evaluate: Make judgments about the value of proposed ideas, solutions, etc., by comparing the proposal to specific criteria or standards.

Create: Put parts or elements together in such a way as to reveal a pattern or structure not clearly there before; identify which data or information from a complex set is appropriate to examine further or from which supported conclusions can be drawn

Preparing For Success

- **KEY** fact to remember; *This is an **ASQ** exam*
- Begin with the end in mind, *Have a plan!!*
- One's preparation time depends upon factors such as:
 - Level of understanding on basic quality concepts
 - Comprehension of certification examination topics
 - Personal productivity when studying and preparing reference materials

Preparation Alternatives, *3 of many*

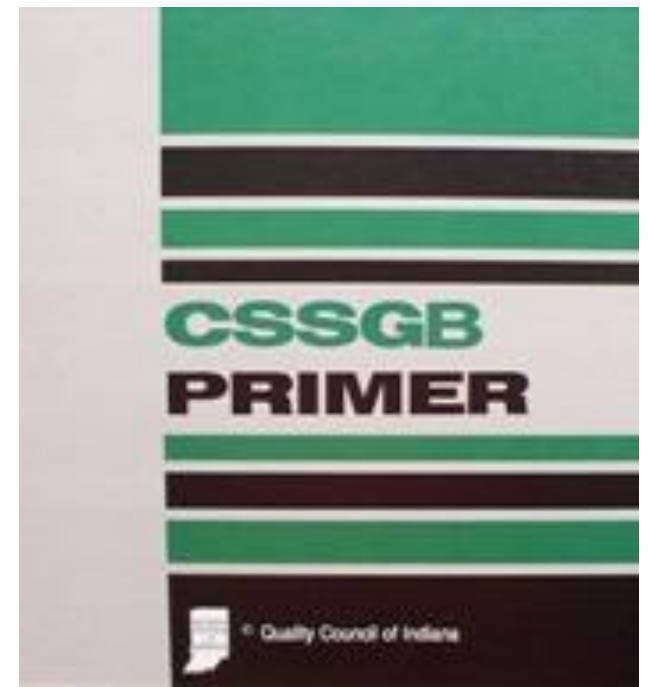
- Self Study
 - Utilize [available resources](#) and defined [references](#)
 - [ASQ webinars](#), [Overview of Seven Lean Six Sigma Tools](#)
- [Section 701's Education Program](#)
 - Offers 14 ASQ Certification Refresher Courses
 - Highest Value (*Low Cost + Most Comprehensive*)
 - Special programs for section members in need
- [ASQ Learning Institute](#)
 - Variety of [products](#), [courses](#), and [services](#)

Suggested Approach

- Combination of all the 3 alternatives
- Primary:
 - [Instructor led Certification Refresher Courses](#)
 - [Quality Council of Indiana Primer](#)
 - [Quality Council of Indiana Sample Exam CD](#)
- Secondary:
 - Self study utilizing a combination of resources
 - [ASQ's Knowledge Center](#)
 - [Quality Progress](#) topic articles, e.g. [Beyond the Basics](#)
 - ASQ's [Question Bank](#) and [My Learning](#)

Benefits of Refresher Course

- Discipline & Structure
- Knowledgeable Topical Support
- Insight on Body of Knowledge Expectations
- Recertification Units
- Reference Materials
- Networking Opportunities
- Cost



Suggested Reference Materials

- 1) [People](#), study aid: [Guru Guide](#)
- 2) [Glossary](#) & [Acronyms](#), e.g. [Quality Glossary](#)
- 3) [Data](#), study aid: [All About Data](#)
- 4) [ASQ Ethics](#)
- 5) [Malcolm Baldrige Award criteria](#)
- 6) [ISO standards criteria](#)
- 7) [ASQ Awards](#)
- 8) Quality Function Deployment, [QP topical article](#)

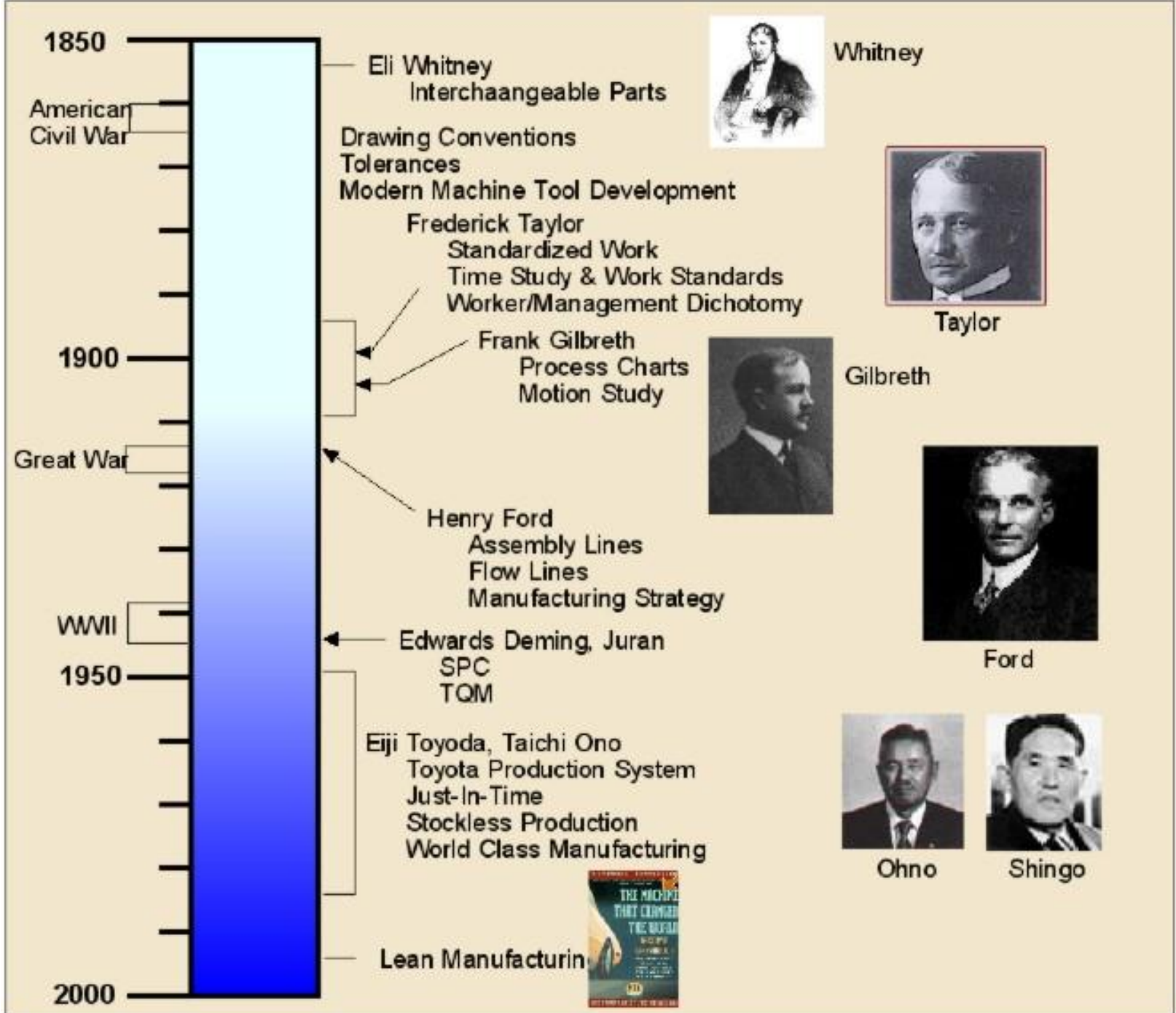


TABLE 1

Basic Quality Tools

Tool	Purpose
Flow chart	Visualizes a process
Check sheet	Collects and analyzes data using a structured, prepared form
Histogram	Analyzes frequency of occurrence of items
Stratification	Separates data gathered from a variety of sources to discern patterns
Control chart using a graph	Studies how a process changes over time
Scatter plot	Finds correlations among variables
Pareto diagram	Prioritizes bar charts to determine the order in which to attack problems
Ishikawa diagram (aka fishbone, cause and effect diagram)	Brainstorms about root causes of problems

TABLE 2

New Quality Tools

Tool	Purpose
Affinity diagram	Organizes a large number of ideas into natural relationships
Relations diagram	Determines cause-and-effect relationships
Tree diagram	Breaks down broad categories into finer levels of detail
Matrix diagram	Organizes knowledge in a matrix format to show the relationship among groups of information
Matrix data analysis method	Analyzes matrices (often replaced in this list by the similar prioritization matrix)
Process decision program chart	Identifies what might go wrong in a plan under development
Arrow diagram	Shows the required order of tasks in a project or process

Measurement Sheets

- Formulas with the symbols named/defined
- Solved problems (*statements only, no questions*)
 - Saves time during exam
- Defects Per Opportunity (DPO)
 - defects in the sample / (sample size * different characteristics)
- Defects per million opportunities (DPMO):
 - $(1,000,000 \times \text{number of defects}) / (\text{number of units} \times \text{number of opportunities per unit})$.¹

Primer Preparation for Exam Day

1. Pull sheets/pages out which are NVA
 - Section I, Sample questions, Références
2. Gather VA pages that are needed during exam
 - Index, Tables, Lists, Summary Charts
3. Call out key things
 - Solved problems, Visual communication tools
4. Highlight key words
 - Must, Should, May, Always, Never, Best, ...

Origins of Six Sigma II - 6

- Philip B. Crosby (1928 - 2001) [II - 7](#)
- [W. Edwards Deming](#) (1900 - 1993) [II - 9](#)
- [Dr. Armand Feigenbaum](#) (1920 -) [II - 12](#)
- [Dr. Kaoru Ishikawa](#) (1915 - 1989) [II - 14](#)
- [Dr. Joseph M. Juran](#) (1904 - 2008) *II - 16*
- [Walter A. Shewhart](#) *II - 18*
- [Dr. Genichi Taguchi](#) (1924 -) *II - 19*
- Bill Smith *II - 21*
- Mikel Harry *II - 22*
- Forrest Breyfogle III *II - 22*

Note: See CSSBB Primer II-6 Table 2.3 Major Contributors to the Six Sigma Knowledge Bank

Sample Question

Cases containing 24 bottles of antibiotics are shipped to drug stores. A pharmacist has doubts about the potency of the drugs and decides to have five (5) bottles from a case tested. What is the probability that the contents of none of the bottles tested will prove to hold defective drugs when, in fact, there are 10 bottles in the case with defective drugs?

- (A) 0.0010
- (B) 0.0059
- (C) 0.0471
- (D) 0.2375

Answer to Sample Question

- This is an “Analyze” question because it requires candidates to understand the theories of probability to determine the correct answer
- Determining the answer requires more than a simple probability calculation because there are many factors that must be considered before using the data to calculate the correct answer

CSSGB Sample Question #406

In a nutshell, six sigma is considered:

- a) A Business improvement approach
- b) A focus on critical customer items
- c) An elimination of mistakes and defects
- d) A concentrated focus on business outputs

CSSGB Sample Answer #406

- All answers have some validity. The best choice is answer A with answers B, C, and D being considered to be subsets of answer Choice A.
- Answer A is considered correct
- Reference [CSSGB Primer, Section II-2](#)

CQM/OE Sample Question

In which of the following diagrams does the input variable X have the highest positive correlation with the output variable Y ?

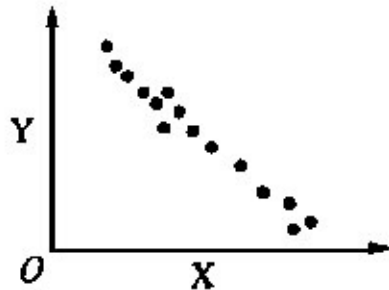
A)



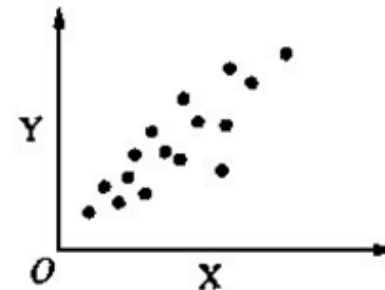
B)



C)

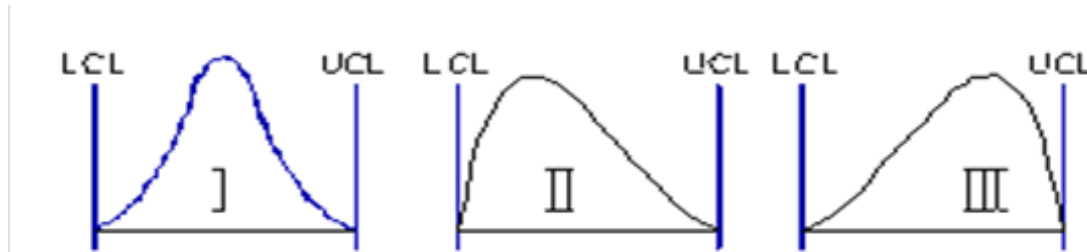


D)



CQE Sample Question #293

Which of the following statements is most applicable to the three curves below?



- A. Curve II is skewed to the Left
- B. The mean, median and average are all the same in curves II and III
- C. Curve III indicates an out of control condition
- D. Curve I indicates a good control

CQE Sample Answer #293

- Curve II is skewed to the right
- The mode, median and average are different in curves II and III
- Curve III may or may not have assignable cause variation, but is shown to be in control
- Curve 1 represents good control
- Answer D is Correct
- Reference: [CQE Primer, Section IX – 15](#) (and Logic)

Where to Find Sample Questions

- [Certification Handbook](#)
 - See Appendix B
- [Quality Council of Indiana Primer](#)
 - Colored sheets at end of each section
- [Quality Council of Indiana Sample Exam CD](#)
 - Provides explanations and ability to simulate exam
- ASQ's [Question Bank](#), *apply yourself and ye shall find more*
- Free Demo [Certified Quality Manager training](#)

The Day of ... Things to Take

- Your GLASSES!!
- Soft lead (#2) pencils – 2 or 3 and a sharpener
- An eraser, a high quality one
- Rulers – a short one and a long one
- Seat cushion
- Calculator and extra batteries
- A refreshing can or two of *Coca-Cola*

ASQ Certification Exam Checklist

Exam location	
<input type="checkbox"/>	ASQ confirmation mail with venue location
<input type="checkbox"/>	Picture ID
<input type="checkbox"/>	Exam venue route map, driving directions, parking location
<input type="checkbox"/>	Exam room location: room number, access, security, phone number
<input type="checkbox"/>	Umbrella or other items based on weather report
Essentials	
<input type="checkbox"/>	Several No. 2 pencils, sharpener, scratch paper
<input type="checkbox"/>	Good eraser, wristwatch
<input type="checkbox"/>	Calculator (refer to ASQ policy), backup calculator if required
<input type="checkbox"/>	Two or three major reference books (bookmarked)
<input type="checkbox"/>	ASQ handbook or other certification primer (bookmarked)
Exam aids	
<input type="checkbox"/>	Formula list
<input type="checkbox"/>	Statistical tables, sampling plans (where appropriate)
<input type="checkbox"/>	Glossary, acronyms, important definitions
<input type="checkbox"/>	Customized cross-reference list
<input type="checkbox"/>	Dictionary
Miscellaneous items (use blank space for additional needs)	
<input type="checkbox"/>	Coffee/juice/bottled water
<input type="checkbox"/>	Coins for vending machine, parking
<input type="checkbox"/>	Aspirin (or any non-drowsy medication)
<input type="checkbox"/>	Earplugs (in case of traffic noise or other distractions)
<input type="checkbox"/>	

Craig's Exam Taking Approach

Make sure have correct exam and complete pack

1st Pass: Know & confirm correct fast

- Bank the time

2nd Pass: Find & confirm within allotted time

- Number of exam questions / exam duration = allotted time

3rd Pass: Research it, Solve it, Move on

- Draw from the time banked earlier

4th Pass: Wild @\$ \$ Guess, trust your gut

- Last 15 minutes, *relax because it is only a couple*

How Do I Take a Multiple-Choice Exam?

- Cross out both negatives of a double negative
- Underline dogmatic terms
 - Statements containing them are usually false as few things in world meet requirements of "always, never, best, etc."
 - If a statement contains "and," both clauses have to be true for the statement to be true
 - If the statement contains "or," only one clause has to be true for the statement to be true
- Select the best choice, the most specific:
 - Example, "A triangle has three sides" is better than "A triangle has more than two sides"

Results

- Automated e-mail sent when results post to your member/customer record
 - Contains link for sign in, allows viewing results
- Also mailed approximately two weeks after exam date
- Results will not be given over the telephone
 - No exceptions made
- [Results FAQs](#)

Recertification

- Two Ways to Recertify
- Recertification Journal:
 - Obtain a minimum of 18 recertification units during your three-year certification period
 - Document them in your recertification journal
- Examination:
 - Sit for the exam. (Required if your certification expired and is past the six-month grace period.)
- Recertification FAQs

According to Ian Barreto!

- Manage your study time, put in time to answer questions from the primer
- Organize your notes at least one week before the test, this takes at least 1-2 nights
- Be confident in your knowledge, you know more than you may think
- The exam is a race against the clock
- 4-hours will be plenty of time so long as you are organized



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