



Six Sigma Exams Excellence Made Easy

400 multiple-choice questions
distributed over 4 exams

Six Sigma Exams are four individual tests each with 100 multiple-choice questions covering the five phases of the Six Sigma DMAIC methodology in addition to a General Knowledge domain area.

They are designed to test your knowledge in Six Sigma and boost your preparation to pass an official Certified Six Sigma Green Belt exam. Each question has its correct answer indicated at the end of the question with an explanation, if necessary.



Six Sigma Exams

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Six Sigma Exams are four exams with 100 questions each. The exams cover all knowledge areas of the Six Sigma Methodology (DMAIC) in addition to a General Knowledge domain area.

Questions are distributed almost evenly in each exam across the knowledge areas as shown below.

Knowledge Area	Exam 1	Exam 2	Exam 3	Exam 4	Total
General Knowledge domain	16	16	17	17	66
Define domain	18	18	18	19	73
Measure domain	16	16	16	16	64
Analyze domain	16	16	16	15	63
Improve domain	17	17	16	16	66
Control domain	17	17	17	17	68
Total	100	100	100	100	400



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Exam No.: 1

Question: 1

Knowledge Area: Analyze domain

It is the probability of getting a value of the test statistic that is at least as extreme as the one found from the sample data. This definition refers to

- a. type I error
- b. p-value
- c. type II error
- d. α

Correct Ans. b

Exam No.: 1

Question: 2

Knowledge Area: Analyze domain

In a simple linear regression problem for a sample of 10; given that $\beta_1 = 0.7836$; $S_x\text{-squared} = 980$; standard deviation for error = 5.56; and $t[\alpha/2 = 0.025; 8 \text{ DF}] = 2.306$. What is the confidence interval of the slope?

- a. $0 < \beta_1 < 2.25$
- b. $0.254 < \beta_1 < 1.324$
- c. $0.374 < \beta_1 < 1.193$
- d. $0.771 < \beta_1 < 0.7967$

Correct Ans. c

Confidence interval for the slope is: $\beta_1 \pm t[\alpha/2; DF] * \delta_\epsilon / \sqrt{S_x\text{-squared}}$



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Exam No.: 3

Question: 17

Knowledge Area: General Knowledge dom

In 5S it refers to the step of putting things in order. Everything has a place.

- a. Seiton [Straighten]
- b. Seiri [Sort]
- c. Seiso [Shine]
- d. Shitsuke [Sustain]

Correct Ans. a

Exam No.: 3

Question: 18

Knowledge Area: Analyze domain

If a maintenance manager wants to decide if installing a new type of machine gear would result in a reduction in gear wear over a specific period of time. The best inference test to be used is

- a. two-way ANOVA
- b. Z-test
- c. chi-square test
- d. paired t-test

Correct Ans. c



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Exam No.: 3

Question: 19

Knowledge Area: Measure domain

All of the below are continuous distributions except for

- a. Normal
- b. Exponential
- c. Poisson
- d. Weibull

Correct Ans. c

Exam No.: 3

Question: 20

Knowledge Area: Improve domain

Four machines in a sequence line have cycle times [seconds] of: MC1 = 20; MC2 = 30; MC3 = 50; and MC4 = 10. The bottleneck machine is

- a. MC1
- b. MC2
- c. MC3
- d. MC4

Correct Ans. c

A bottleneck is the operation with the highest cycle time.



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Exam No.: 2

Question: 33

Knowledge Area: Analyze domain

In a process that manufactures bottle caps; the population standard deviation for the cap diameter is 3 mm. A sample of 250 caps was drawn. The sample mean was 10 mm. What is the confidence interval for the population mean at 95% confidence level?

- a. $10.77 \leq \mu \leq 13.45$
- b. $9.98 \leq \mu \leq 10.02$
- c. $10.4 \leq \mu \leq 12.77$
- d. $9.63 \leq \mu \leq 10.37$

Correct Ans. d

Confidence Interval for large samples is calculated by: $\bar{x} \pm Z[\alpha/2] * \delta/\sqrt{n}$

Exam No.: 2

Question: 34

Knowledge Area: Control domain

A Green Belt wants to construct an \bar{x} - R chart for a process that manufactures pipes. 23 samples were drawn with a sample size of 6. Overall samples average $[\bar{\bar{x}}] = 18.6$. Overall average range $[\bar{R}] = 4.2$. The UCL and LCL of the R chart will be

- a. UCL = 10.64; LCL = 0
- b. UCL = 8.86; LCL = 0
- c. UCL = 20.63; LCL = 16.57
- d. UCL = 8.42; LCL = 0

Correct Ans. d

Finding D_4 and D_3 from the \bar{x} - R chart constants table at $n = 6$ [2.004; and 0; respectively]. And applying UCL and LCL formulas for R chart yield UCL = 8.42; LCL = 0.



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Exam No.: 2

Question: 35

Knowledge Area: General Knowledge dom

In this step of the DMAIC process current state of the process to be improved is determined thru data collection from various sources.

- a. Define
- b. Measure
- c. Analyze
- d. Control

Correct Ans. b

Exam No.: 2

Question: 36

Knowledge Area: Define domain

One disadvantage of having a downward flow of communication in any organization is that

- a. the message does not reach on time to the floor level employees
- b. the message is not usually encoded in the right language of down level employees
- c. the original message from top levels is usually distorted by the time it reaches down
- d. usually messages from top levels are vague and may be interpreted in several meanings

Correct Ans. c
This is sometimes referred to as filtering effect.