CERTIFIED SIX SIGMA GREEN BELT STUDY GUIDE

PRACTICE EXAM 16 - 100 QUESTIONS

This standalone practice exam is aligned to the ASQ Certified Six Sigma Green Belt Body of Knowledge. Select the single best answer for each question. For a timed simulation, allow four hours.

Answer key and explanations follow the questions.

PRACTICE EXAM 16: CERTIFIED SIX SIGMA GREEN BELT (100 QUESTIONS)

This 100-question practice exam follows the ASQ CSSGB body of knowledge. Select the single best answer for each question. For a timed simulation, allow four hours. This unofficial study resource is not an ASQ examination.

1. During a Overview: Six Sigma and the Organization review, which response is most appropriate for the Green Belt?

A. list every possible stakeholder complaint under the stated operating conditions

B. state that quality should improve under the stated operating conditions

C. promise a specific solution immediately under the stated operating conditions

D. define the project problem using baseline performance and business impact

2. During a Overview: Six Sigma and the Organization review, which response is most appropriate for the Green Belt?

A. use process FMEA only after customer complaints under the stated operating conditions

B. use design FMEA to examine product failure modes before release

C. substitute a control chart for failure analysis under the stated operating conditions

D. evaluate only supplier invoices under the stated operating conditions using the available project evidence

3. During a Overview: Six Sigma and the Organization review, which response is most appropriate for the Green Belt?

A. calculate an FMEA risk priority number from severity, occurrence, and detection

B. add only severity and occurrence under the stated operating conditions using the available project evidence

C. average all three ratings under the stated operating conditions using the available project evidence

D. subtract detection from severity under the stated operating conditions using the available project evidence

4. During a Overview: Six Sigma and the Organization review, which response is most appropriate for the Green Belt?

A. begin with final inspection only under the stated operating conditions using the available project evidence

B. repeat DMAIC without a defined process under the stated operating conditions

C. use DMADV when creating a new process that must meet CTQs

D. skip verification after design under the stated operating conditions using the available project evidence

5. During a Overview: Six Sigma and the Organization review, which response is most appropriate for the Green Belt?

A. apply just-in-time replenishment to reduce excess inventory

B. order the largest economical batch under the stated operating conditions

C. hold safety stock at every step under the stated operating conditions

D. schedule production by monthly forecast alone under the stated operating conditions

6. During a Overview: Six Sigma and the Organization review, which response is most appropriate for the Green Belt?

A. create a Pareto chart of defect categories under the stated operating conditions

B. use a spaghetti diagram to study excessive travel in a work area

C. run a capability study under the stated operating conditions using the available project evidence

D. build a responsibility matrix under the stated operating conditions using the available project evidence

7. During a Overview: Six Sigma and the Organization review, which response is most appropriate for the Green Belt?

A. rank employees by utilization under the stated operating conditions
B. list only departmental job titles under the stated operating conditions
C. draw an organization chart under the stated operating conditions
D. map material and information flow from supplier through customer

8. During a Overview: Six Sigma and the Organization review, which response is most appropriate for the Green Belt?

A. divide defects by total output under the stated operating conditions
B. use the longest individual cycle time under the stated operating conditions
C. calculate takt time from available production time and customer demand
D. average setup time across products under the stated operating conditions

9. During a Overview: Six Sigma and the Organization review, which response is most appropriate for the Green Belt?

A. build inventory before studying the flow under the stated operating conditions
B. maximize every resource utilization rate under the stated operating conditions
C. identify the system constraint before increasing upstream output
D. add inspection after every operation under the stated operating conditions

10. During a Overview: Six Sigma and the Organization review, which response is most appropriate for the Green Belt?

A. use a balanced scorecard to connect local measures with strategy
B. replace all measures with a single finance metric under the stated operating conditions
C. report only monthly defect counts under the stated operating conditions
D. remove customer measures from reviews under the stated operating conditions

11. During a Overview: Six Sigma and the Organization review, which response is most appropriate for the Green Belt?

A. limit discussion to department preferences under the stated operating conditions
B. choose the team’s favorite problem under the stated operating conditions
C. start with a solution already selected under the stated operating conditions
D. align a project objective to a measurable business driver

12. During a Define Phase review, which response is most appropriate for the Green Belt?

A. assume processes stay within one department under the stated operating conditions
B. distinguish a process boundary from an organizational reporting boundary
C. use a boundary only for budgets under the stated operating conditions
D. define boundaries after implementation under the stated operating conditions

13. During a Define Phase review, which response is most appropriate for the Green Belt?

A. delete working files after closure under the stated operating conditions
B. document lessons learned so future teams can reuse project knowledge
C. keep results within the project team under the stated operating conditions
D. focus only on final financial results under the stated operating conditions

14. During a Define Phase review, which response is most appropriate for the Green Belt?

A. close the project before implementation under the stated operating conditions
B. skip reviews to preserve momentum under the stated operating conditions
C. replace data with verbal updates under the stated operating conditions
D. use a tollgate review to verify deliverables before moving phases

15. During a Define Phase review, which response is most appropriate for the Green Belt?

A. exclude people with concerns under the stated operating conditions
B. seek rapid unanimous agreement under the stated operating conditions
C. address groupthink by inviting dissenting evidence before a decision
D. treat seniority as proof under the stated operating conditions

16. During a Define Phase review, which response is most appropriate for the Green Belt?

A. use nominal group technique to generate ideas and rank them independently
B. let the manager decide before discussion under the stated operating conditions
C. use unstructured debate only under the stated operating conditions using the available project evidence
D. eliminate silent idea generation under the stated operating conditions using the available project evidence

17. During a Define Phase review, which response is most appropriate for the Green Belt?

A. assign every person final approval under the stated operating conditions using the available project evidence
B. replace all roles with a single sponsor under the stated operating conditions using the available project evidence
C. use a RACI chart to clarify who is responsible, accountable, consulted, and informed
D. avoid documenting decisions under the stated operating conditions using the available project evidence

18. During a Define Phase review, which response is most appropriate for the Green Belt?

A. use a prioritization matrix to compare alternatives against weighted criteria
B. choose the option with the loudest advocate under the stated operating conditions
C. select the quickest suggestion under the stated operating conditions using the available project evidence

D. avoid defining decision criteria under the stated operating conditions using the available project evidence

19. During a Define Phase review, which response is most appropriate for the Green Belt?

A. assign cause-and-effect probabilities under the stated operating conditions using the available project evidence
B. calculate a confidence interval under the stated operating conditions using the available project evidence
C. monitor a process over time under the stated operating conditions using the available project evidence
D. use an affinity diagram to organize a large set of related ideas

20. During a Define Phase review, which response is most appropriate for the Green Belt?

A. track only the primary target under the stated operating conditions
B. include consequential metrics to detect harm caused by an improvement
C. remove measures once results improve under the stated operating conditions
D. measure benefits after closing the project under the stated operating conditions

21. During a Define Phase review, which response is most appropriate for the Green Belt?

A. identify the task with lowest cost under the stated operating conditions using the available project evidence
B. use critical-path analysis to find tasks that determine the shortest project duration
C. find the most popular team activity under the stated operating conditions using the available project evidence
D. select the activity with most resources under the stated operating conditions using the available project evidence

22. During a Define Phase review, which response is most appropriate for the Green Belt?

A. assign RACI roles automatically under the stated operating conditions using the available project evidence

B. identify root causes of defects under the stated operating conditions using the available project evidence

C. compare distributions to specifications under the stated operating conditions using the available project evidence

D. use a Gantt chart to communicate tasks, durations, and schedule progress

23. During a Define Phase review, which response is most appropriate for the Green Belt?

A. use a work breakdown structure to decompose project deliverables into work packages

B. plot individual measurements over time under the stated operating conditions using the available project evidence

C. rank causes by frequency under the stated operating conditions using the available project evidence

D. display customer requirements under the stated operating conditions using the available project evidence

24. During a Define Phase review, which response is most appropriate for the Green Belt?

A. omit baseline information under the stated operating conditions using the available project evidence

B. use a charter as a detailed work instruction under the stated operating conditions

C. write a charter that states scope, goal, business case, and roles

D. define a solution before the problem under the stated operating conditions

25. During a Define Phase review, which response is most appropriate for the Green Belt?

A. use the Kano model to distinguish basic expectations from delighters

B. rank defects only by repair cost under the stated operating conditions

C. replace customer research with internal guesses under the stated operating conditions

D. classify every feature as mandatory under the stated operating conditions

26. During a Define Phase review, which response is most appropriate for the Green Belt?

A. treat all needs as equal priorities under the stated operating conditions
B. convert every request into a cost target under the stated operating conditions
C. translate a customer need into measurable critical-to-quality requirements
D. wait until control planning to define needs under the stated operating conditions

27. During a Define Phase review, which response is most appropriate for the Green Belt?

A. ask questions that suggest the desired answer
B. collect voice-of-customer input through unbiased interview questions
C. sample only satisfied customers under the stated operating conditions
D. discard negative feedback as outliers under the stated operating conditions

28. During a Define Phase review, which response is most appropriate for the Green Belt?

A. collect opinions without performance criteria under the stated operating conditions
B. compare unrelated internal departments only under the stated operating conditions
C. ignore external practices under the stated operating conditions using the available project evidence
D. use competitive benchmarking to compare performance with direct competitors

29. During a Define Phase review, which response is most appropriate for the Green Belt?

A. leave ownership undefined under the stated operating conditions using the available project evidence
B. assign ownership to the newest team member under the stated operating conditions
C. identify the process owner who can sustain changes after the project
D. make the facilitator permanent owner under the stated operating conditions using the available project evidence

30. During a Define Phase review, which response is most appropriate for the Green Belt?

A. schedule project tasks under the stated operating conditions using the available project evidence
B. estimate correlation between variables under the stated operating conditions using the available project evidence
C. calculate control limits under the stated operating conditions using the available project evidence
D. use a SIPOC to clarify suppliers, inputs, process, outputs, and customers

31. During a Define Phase review, which response is most appropriate for the Green Belt?

A. select a project with meaningful impact and a manageable scope
B. choose the largest problem regardless of boundaries under the stated operating conditions
C. start the project before identifying a sponsor under the stated operating conditions
D. select work solely because data are unavailable under the stated operating conditions

32. During a Measure Phase review, which response is most appropriate for the Green Belt?

A. assume recorded data are always correct under the stated operating conditions
B. include checks for missing and impossible values in a data-collection plan
C. delete data definitions after collection under the stated operating conditions using the available project evidence
D. allow each collector to use different codes under the stated operating conditions

33. During a Measure Phase review, which response is most appropriate for the Green Belt?

A. use a normal probability plot to assess whether normality is plausible
B. identify the project critical path under the stated operating conditions using the available project evidence
C. assign responsibilities to stakeholders under the stated operating conditions using the available project evidence
D. translate voice-of-customer needs under the stated operating conditions using the available project evidence

34. During a Measure Phase review, which response is most appropriate for the Green Belt?

A. use both terms interchangeably under the stated operating conditions
B. set control limits equal to customer requirements
C. treat specifications as calculated from process data
D. distinguish control limits from specification limits under the stated operating conditions

35. During a Measure Phase review, which response is most appropriate for the Green Belt?

A. treat Cpk as a project schedule metric under the stated operating conditions
B. use Cpk only for attribute counts under the stated operating conditions
C. interpret Cpk as capability adjusted for process centering
D. ignore the nearest specification limit under the stated operating conditions

36. During a Measure Phase review, which response is most appropriate for the Green Belt?

A. treat Cp as a centering measure only under the stated operating conditions
B. interpret Cp as potential capability based on specification width and within variation
C. use Cp to count defects directly under the stated operating conditions using the available project evidence
D. equate Cp with customer satisfaction under the stated operating conditions using the available project evidence

37. During a Measure Phase review, which response is most appropriate for the Green Belt?

A. ignore time-order behavior under the stated operating conditions
B. calculate Cp from specification width alone under the stated operating conditions
C. verify process stability before interpreting a capability index
D. use customer surveys as control limits under the stated operating conditions

38. During a Measure Phase review, which response is most appropriate for the Green Belt?

A. compare one operator with another only under the stated operating conditions
B. check measurement bias by comparing observed values with a reference value
C. use a Pareto chart of defects under the stated operating conditions
D. calculate takt time under the stated operating conditions using the available project evidence

39. During a Measure Phase review, which response is most appropriate for the Green Belt?

A. use a gauge R&R study to assess repeatability and reproducibility
B. compare a process mean to a target under the stated operating conditions
C. rank failure modes by risk under the stated operating conditions
D. estimate customer satisfaction under the stated operating conditions using the available project evidence

40. During a Measure Phase review, which response is most appropriate for the Green Belt?

A. document a future-state process under the stated operating conditions using the available project evidence
B. rank defect categories by count under the stated operating conditions using the available project evidence
C. monitor stability over time under the stated operating conditions using the available project evidence
D. use a scatter diagram to explore association between two quantitative variables

41. During a Measure Phase review, which response is most appropriate for the Green Belt?

A. document customer interviews under the stated operating conditions using the available project evidence
B. show task dependencies under the stated operating conditions using the available project evidence
C. assign team accountability under the stated operating conditions using the available project evidence
D. use a histogram to display the distributional shape of continuous data

42. During a Measure Phase review, which response is most appropriate for the Green Belt?

A. treat it as a specification limit under the stated operating conditions
B. use it to identify the most frequent category under the stated operating conditions
C. use standard deviation to describe typical spread around the mean
D. use it as a sample size under the stated operating conditions

43. During a Measure Phase review, which response is most appropriate for the Green Belt?

A. use the median when an extreme value would distort the arithmetic mean
B. replace all values with the largest value under the stated operating conditions
C. use the range as a location measure under the stated operating conditions
D. discard the entire data set under the stated operating conditions using the available project evidence

44. During a Measure Phase review, which response is most appropriate for the Green Belt?

A. sample only the largest subgroup under the stated operating conditions
B. use stratified sampling when important subgroups must be represented
C. remove subgroup labels before sampling under the stated operating conditions
D. treat every subgroup as identical under the stated operating conditions

45. During a Measure Phase review, which response is most appropriate for the Green Belt?

A. choose units easiest to inspect under the stated operating conditions using the available project evidence
B. select only the first units produced under the stated operating conditions using the available project evidence
C. use random sampling when each unit should have an equal selection chance
D. sample one shift to represent all shifts under the stated operating conditions

46. During a Measure Phase review, which response is most appropriate for the Green Belt?

A. classify defect counts per unit as discrete attributes data

B. treat them as ratio measurements only under the stated operating conditions
C. assume they are continuous observations under the stated operating conditions
D. label them interval-scale measurements under the stated operating conditions

47. During a Measure Phase review, which response is most appropriate for the Green Belt?

A. classify it as nominal data under the stated operating conditions
B. classify product weight as continuous variables data
C. treat it as a count of defects
D. label it an ordinal category under the stated operating conditions

48. During a Measure Phase review, which response is most appropriate for the Green Belt?

A. use it to eliminate variation under the stated operating conditions using the available project evidence
B. claim every individual observation becomes normal under the stated operating conditions using the available project evidence
C. equate it with random sampling only under the stated operating conditions using the available project evidence
D. describe the central limit theorem as the basis for approximate normality of sample means

49. During a Measure Phase review, which response is most appropriate for the Green Belt?

A. compare paired observations under the stated operating conditions using the available project evidence
B. model a continuous measurement mean under the stated operating conditions using the available project evidence
C. use a Poisson distribution for counts of rare events per opportunity interval
D. rank ordered categories under the stated operating conditions using the available project evidence

50. During a Measure Phase review, which response is most appropriate for the Green Belt?

A. use a binomial distribution for counts of successes in fixed trials

B. model time between rare events under the stated operating conditions using the available project evidence

C. model continuous normal measurements only under the stated operating conditions using the available project evidence

D. model ranked survey categories under the stated operating conditions using the available project evidence

51. During a Measure Phase review, which response is most appropriate for the Green Belt?

A. add probabilities regardless of event relationship under the stated operating conditions

B. apply the multiplication rule for independent events by multiplying probabilities

C. subtract the larger probability under the stated operating conditions using the available project evidence

D. divide each probability by the sample size under the stated operating conditions

52. During a Analyze Phase review, which response is most appropriate for the Green Belt?

A. adjust the process after every point under the stated operating conditions

B. separate special-cause investigation from routine common-cause management

C. treat all variation as operator error under the stated operating conditions

D. ignore stable patterns under the stated operating conditions

53. During a Analyze Phase review, which response is most appropriate for the Green Belt?

A. avoid reporting sample size under the stated operating conditions

B. replace estimates with a single exact claim

C. treat the interval as a control limit

D. report confidence intervals to communicate estimate uncertainty

54. During a Analyze Phase review, which response is most appropriate for the Green Belt?

A. assign tasks to a project plan under the stated operating conditions
B. compare customer requirements to CTQs under the stated operating conditions using the available project evidence
C. find a process constraint under the stated operating conditions using the available project evidence
D. use an F-test to compare variability when its assumptions are satisfied

55. During a Analyze Phase review, which response is most appropriate for the Green Belt?

A. change the hypothesis after seeing p-value under the stated operating conditions
B. select the conclusion first under the stated operating conditions
C. state the null hypothesis before examining test results
D. omit the comparison value under the stated operating conditions

56. During a Analyze Phase review, which response is most appropriate for the Green Belt?

A. investigate a confounder before claiming that a correlation is causal
B. ignore variables outside the model under the stated operating conditions
C. assume a high correlation is proof under the stated operating conditions
D. remove contradictory observations under the stated operating conditions using the available project evidence

57. During a Analyze Phase review, which response is most appropriate for the Green Belt?

A. calculate a customer satisfaction score under the stated operating conditions using the available project evidence
B. use a multi-vari study to separate positional, cyclical, and temporal variation
C. assign a project sponsor under the stated operating conditions using the available project evidence
D. determine a contract price under the stated operating conditions using the available project evidence

58. During a Analyze Phase review, which response is most appropriate for the Green Belt?

A. choose a sampling method under the stated operating conditions using the available project evidence

B. estimate a p-value from current data under the stated operating conditions using the available project evidence

C. replace a project charter under the stated operating conditions using the available project evidence

D. perform gap analysis by comparing current performance with a defined future state

59. During a Analyze Phase review, which response is most appropriate for the Green Belt?

A. use a fault tree to analyze combinations of events leading to failure

B. display a future-state value stream under the stated operating conditions using the available project evidence

C. assign customer priorities under the stated operating conditions using the available project evidence

D. calculate a capability index under the stated operating conditions using the available project evidence

60. During a Analyze Phase review, which response is most appropriate for the Green Belt?

A. replace data collection with opinions under the stated operating conditions using the available project evidence

B. select the most frequent defect automatically under the stated operating conditions

C. use 5 Whys to probe successive causal links behind a problem

D. set a specification limit under the stated operating conditions using the available project evidence

61. During a Analyze Phase review, which response is most appropriate for the Green Belt?

A. document training attendance under the stated operating conditions using the available project evidence

B. rank actions by project duration under the stated operating conditions

C. calculate sample statistics under the stated operating conditions using the available project evidence

D. use a cause-and-effect diagram to organize potential causes by categories

62. During a Analyze Phase review, which response is most appropriate for the Green Belt?

A. compare paired continuous means under the stated operating conditions
B. estimate a continuous regression slope under the stated operating conditions
C. use chi-square analysis for association among categorical variables
D. set an individuals-chart limit under the stated operating conditions

63. During a Analyze Phase review, which response is most appropriate for the Green Belt?

A. compare one process with specifications under the stated operating conditions
B. use ANOVA to compare means across more than two groups
C. test association of two categories only under the stated operating conditions
D. rank causes by frequency under the stated operating conditions using the available project evidence

64. During a Analyze Phase review, which response is most appropriate for the Green Belt?

A. use a paired t-test when measurements are naturally matched
B. compare unrelated groups with no pairing under the stated operating conditions
C. test a single proportion only under the stated operating conditions
D. compare only categorical frequencies under the stated operating conditions

65. During a Analyze Phase review, which response is most appropriate for the Green Belt?

A. increase test power by using a larger sample when other conditions remain fixed
B. increase random measurement error under the stated operating conditions using the available project evidence
C. raise variation deliberately under the stated operating conditions using the available project evidence
D. remove relevant observations under the stated operating conditions using the available project evidence

66. During a Analyze Phase review, which response is most appropriate for the Green Belt?

A. collecting more observations under the stated operating conditions using the available project evidence

B. rejecting a true null hypothesis under the stated operating conditions using the available project evidence

C. using a two-sided test under the stated operating conditions using the available project evidence

D. define a Type II error as failing to reject a false null hypothesis

67. During a Analyze Phase review, which response is most appropriate for the Green Belt?

A. failing to collect data under the stated operating conditions using the available project evidence

B. accepting a false null hypothesis under the stated operating conditions using the available project evidence

C. define a Type I error as rejecting a true null hypothesis

D. choosing a small sample under the stated operating conditions using the available project evidence

68. During a Analyze Phase review, which response is most appropriate for the Green Belt?

A. assume a small p-value guarantees business value

B. distinguish statistical significance from practical significance under the stated operating conditions

C. avoid considering effect size under the stated operating conditions

D. accept every significant result without context under the stated operating conditions

69. During a Analyze Phase review, which response is most appropriate for the Green Belt?

A. interpret a small p-value as evidence against the stated null hypothesis

B. treat it as the probability the alternative is true under the stated operating conditions

C. ignore the chosen significance level under the stated operating conditions using the available project evidence

D. declare practical importance automatically under the stated operating conditions using the available project evidence

70. During a Improve Phase review, which response is most appropriate for the Green Belt?

A. eliminate contingency plans under the stated operating conditions using the available project evidence

B. approve a solution without user testing under the stated operating conditions

C. replace pilot data with opinions under the stated operating conditions

D. use try-storming to test a proposed solution under realistic conditions

71. During a Improve Phase review, which response is most appropriate for the Green Belt?

A. add inspection after every step under the stated operating conditions using the available project evidence

B. increase queues to protect utilization under the stated operating conditions using the available project evidence

C. use continuous flow to reduce waiting and handoff delays where feasible

D. separate linked operations unnecessarily under the stated operating conditions using the available project evidence

72. During a Improve Phase review, which response is most appropriate for the Green Belt?

A. wait for a major capital investment under the stated operating conditions

B. replace all projects with annual planning under the stated operating conditions

C. avoid cross-functional participation under the stated operating conditions using the available project evidence

D. conduct a kaizen event as a focused, rapid improvement effort

73. During a Improve Phase review, which response is most appropriate for the Green Belt?

A. allow each operator to invent a method under the stated operating conditions

B. use standard work to document the best current method consistently

C. replace training with memory under the stated operating conditions using the available project evidence

D. treat standards as permanent and unchangeable under the stated operating conditions

74. During a Improve Phase review, which response is most appropriate for the Green Belt?

A. use SMED principles to reduce changeover time
B. increase lot size before studying setup under the stated operating conditions
C. combine setup with customer inspection under the stated operating conditions
D. delay setup work until the machine stops

75. During a Improve Phase review, which response is most appropriate for the Green Belt?

A. increase tolerance limits under the stated operating conditions using the available project evidence
B. inspect errors only after shipment under the stated operating conditions
C. use poka-yoke to prevent or immediately detect an error
D. remove standard work under the stated operating conditions using the available project evidence

76. During a Improve Phase review, which response is most appropriate for the Green Belt?

A. use 5S only for final inspection under the stated operating conditions
B. apply 5S to organize, standardize, and sustain an effective workplace
C. treat it as a financial accounting method under the stated operating conditions
D. apply it only after a defect occurs under the stated operating conditions

77. During a Improve Phase review, which response is most appropriate for the Green Belt?

A. replace visual signals with monthly forecasts under the stated operating conditions
B. use kanban as a root-cause tool under the stated operating conditions
C. use kanban signals to authorize replenishment in a pull system
D. increase batch sizes automatically under the stated operating conditions using the available project evidence

78. During a Improve Phase review, which response is most appropriate for the Green Belt?

A. push large batches based solely on forecasts under the stated operating conditions

B. use a pull system to trigger work from downstream demand

C. maximize work-in-process inventory under the stated operating conditions using the available project evidence

D. schedule every station independently under the stated operating conditions using the available project evidence

79. During a Improve Phase review, which response is most appropriate for the Green Belt?

A. use a proof of concept to demonstrate that a proposed solution can work

B. substitute a proof of concept for a control plan under the stated operating conditions

C. declare success before testing under the stated operating conditions using the available project evidence

D. avoid defining acceptance criteria under the stated operating conditions using the available project evidence

80. During a Improve Phase review, which response is most appropriate for the Green Belt?

A. eliminate measures during rollout under the stated operating conditions

B. implement globally without testing under the stated operating conditions

C. wait for final audit findings under the stated operating conditions

D. use a pilot test to learn before broad implementation

81. During a Improve Phase review, which response is most appropriate for the Green Belt?

A. treat factors as unrelated by definition under the stated operating conditions using the available project evidence

B. assume main effects always tell the full story under the stated operating conditions

C. ignore nonparallel patterns on an interaction plot under the stated operating conditions

D. interpret an interaction when one factor’s effect depends on another factor level

82. During a Improve Phase review, which response is most appropriate for the Green Belt?

A. add more factors without runs under the stated operating conditions
B. repeat a reading only after failure under the stated operating conditions
C. use replication to estimate experimental error and improve precision
D. replace randomization with inspection under the stated operating conditions

83. During a Improve Phase review, which response is most appropriate for the Green Belt?

A. run treatments in a convenient fixed order under the stated operating conditions
B. use randomization to reduce bias from uncontrolled influences in an experiment
C. assign only one treatment to all units under the stated operating conditions
D. ignore time-related effects under the stated operating conditions using the available project evidence

84. During a Improve Phase review, which response is most appropriate for the Green Belt?

A. define levels as the settings chosen for an experimental factor
B. treat levels as response measurements under the stated operating conditions
C. use levels as defect counts under the stated operating conditions
D. assume each factor has one setting under the stated operating conditions

85. During a Improve Phase review, which response is most appropriate for the Green Belt?

A. identify factors as controllable input variables in a designed experiment
B. define factors as customer complaints under the stated operating conditions
C. treat factors as output responses under the stated operating conditions
D. use factors only for scheduling under the stated operating conditions

86. During a Control Phase review, which response is most appropriate for the Green Belt?

A. hide performance data in monthly reports under the stated operating conditions using the available project evidence

B. use visual management to make status and abnormalities obvious at the point of work

C. replace standards with verbal reminders under the stated operating conditions using the available project evidence

D. use visuals only for decoration under the stated operating conditions using the available project evidence

87. During a Control Phase review, which response is most appropriate for the Green Belt?

A. eliminate preventive maintenance records under the stated operating conditions using the available project evidence

B. leave maintenance only to emergency repair under the stated operating conditions

C. treat operators as disconnected from equipment care under the stated operating conditions

D. use total productive maintenance to improve equipment reliability through broad participation

88. During a Control Phase review, which response is most appropriate for the Green Belt?

A. use PDCA only after a failure under the stated operating conditions using the available project evidence

B. act before planning or checking under the stated operating conditions using the available project evidence

C. apply PDCA by planning a change, trying it, checking results, then acting

D. replace learning with one-time implementation under the stated operating conditions using the available project evidence

89. During a Control Phase review, which response is most appropriate for the Green Belt?

A. define it as an internal audit only under the stated operating conditions using the available project evidence

B. distinguish a second-party audit as an audit of a supplier by a customer

C. define it as an independent certification audit under the stated operating conditions using the available project evidence

D. treat it as a financial review under the stated operating conditions using the available project evidence

90. During a Control Phase review, which response is most appropriate for the Green Belt?

A. distinguish a first-party audit as an internal audit by the organization itself

B. define it as an audit by a customer under the stated operating conditions

C. define it as certification-body audit under the stated operating conditions using the available project evidence

D. treat it as an informal team meeting under the stated operating conditions

91. During a Control Phase review, which response is most appropriate for the Green Belt?

A. delay training until audit failure under the stated operating conditions using the available project evidence

B. announce the change without practice under the stated operating conditions using the available project evidence

C. train only the project sponsor under the stated operating conditions using the available project evidence

D. build a training plan that addresses the changed standard work and competence

92. During a Control Phase review, which response is most appropriate for the Green Belt?

A. replace revision history with verbal updates under the stated operating conditions

B. allow uncontrolled local copies under the stated operating conditions using the available project evidence

C. use document control to ensure workers use the current approved procedure

D. delete training records under the stated operating conditions using the available project evidence

93. During a Control Phase review, which response is most appropriate for the Green Belt?

A. omit responsibility for response under the stated operating conditions using the available project evidence

B. record only the target value under the stated operating conditions

C. document reaction plans in a control plan for out-of-control signals

D. remove data collection requirements under the stated operating conditions using the available project evidence

94. During a Control Phase review, which response is most appropriate for the Green Belt?

A. mix observations from unrelated conditions under the stated operating conditions

B. form rational subgroups so within-group variation reflects short-term common causes

C. group data only by convenient calendar weeks under the stated operating conditions

D. use subgroups to hide variation under the stated operating conditions

95. During a Control Phase review, which response is most appropriate for the Green Belt?

A. treat a point beyond a control limit as evidence of a possible special cause

B. adjust the process before investigating under the stated operating conditions using the available project evidence

C. treat it as a specification violation automatically under the stated operating conditions using the available project evidence

D. ignore the point if the average is on target under the stated operating conditions

96. During a Control Phase review, which response is most appropriate for the Green Belt?

A. use an individuals chart for counts under the stated operating conditions

B. use a c chart for varying unit sizes under the stated operating conditions

C. use an np chart for defect rates under the stated operating conditions

D. use a u chart for defects per unit when opportunity varies

97. During a Control Phase review, which response is most appropriate for the Green Belt?

A. use a u chart only for constant opportunity under the stated operating conditions

B. use a c chart for counts of defects when opportunity area is constant

C. use a p chart for defect counts under the stated operating conditions using the available project evidence

D. use an X-bar chart for nonconformities under the stated operating conditions using the available project evidence

98. During a Control Phase review, which response is most appropriate for the Green Belt?

A. use a u chart for individual values under the stated operating conditions using the available project evidence

B. use a p chart only for constant counts under the stated operating conditions

C. use an np chart to monitor the number defective with constant sample size

D. use an R chart for defectives under the stated operating conditions using the available project evidence

99. During a Control Phase review, which response is most appropriate for the Green Belt?

A. use a c chart for continuous measurements under the stated operating conditions using the available project evidence

B. use an np chart when denominators differ under the stated operating conditions using the available project evidence

C. use an X-bar chart for defectives under the stated operating conditions using the available project evidence

D. use a p chart to monitor the proportion defective when sample size can vary

100. During a Control Phase review, which response is most appropriate for the Green Belt?

A. use an individuals and moving-range chart for one observation at a time

B. use an X-bar chart with no subgroups under the stated operating conditions

C. use a p chart for dimensions under the stated operating conditions using the available project evidence

D. use a c chart for sample totals under the stated operating conditions

Practice Exam 16: Answer Key and Explanations

1. D — define the project problem using baseline performance and business impact is correct because a useful problem statement is factual, bounded, and measurable. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement consistently decisions.

2. B — use design FMEA to examine product failure modes before release is correct because design fmea targets product-design risks before production begins. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement consistently consistently decisions.

3. A — calculate an FMEA risk priority number from severity, occurrence, and detection is correct because an fmea rpn combines severity, occurrence, and detection ratings. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

4. C — use DMADV when creating a new process that must meet CTQs is correct because dmadv is a design-focused roadmap for new or fundamentally redesigned work. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

5. A — apply just-in-time replenishment to reduce excess inventory is correct because just-in-time replenishes based on actual consumption and flow needs. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement consistently consistently consistently consistently decisions.

6. B — use a spaghetti diagram to study excessive travel in a work area is correct because a spaghetti diagram traces movement through physical space. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

7. D — map material and information flow from supplier through customer is correct because a value-stream map makes end-to-end flow and waste visible. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement consistently consistently decisions.

8. C — calculate takt time from available production time and customer demand is correct because takt time expresses the pace needed to meet customer demand. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

9. C — identify the system constraint before increasing upstream output is correct because theory of constraints focuses attention on the limiting resource. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement consistently consistently consistently decisions.

10. A — use a balanced scorecard to connect local measures with strategy is correct because a balanced scorecard links operational indicators to strategic outcomes. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement consistently decisions.

11. D — align a project objective to a measurable business driver is correct because six sigma projects should connect improvement work to organizational value. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement consistently decisions.

12. B — distinguish a process boundary from an organizational reporting boundary is correct because processes often cross functions, so their boundaries must reflect actual flow. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

13. B — document lessons learned so future teams can reuse project knowledge is correct because lessons learned transfer useful knowledge beyond the completed project. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement consistently decisions.

14. D — use a tollgate review to verify deliverables before moving phases is correct because tollgates provide structured sponsor review of phase deliverables. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement consistently consistently decisions.

15. C — address groupthink by inviting dissenting evidence before a decision is correct because constructive dissent helps teams test assumptions and avoid groupthink. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement consistently consistently decisions.

16. A — use nominal group technique to generate ideas and rank them independently is correct because nominal group technique balances individual input with structured ranking. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

17. C — use a RACI chart to clarify who is responsible, accountable, consulted, and informed is correct because raci prevents role ambiguity by distinguishing four participation types. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

18. A — use a prioritization matrix to compare alternatives against weighted criteria is correct because a prioritization matrix makes tradeoffs explicit and repeatable. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement consistently consistently decisions.

19. D — use an affinity diagram to organize a large set of related ideas is correct because affinity diagrams group ideas into natural themes. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement consistently decisions.

20. B — include consequential metrics to detect harm caused by an improvement is correct because consequential metrics guard against shifting a problem elsewhere. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement consistently consistently decisions.

21. B — use critical-path analysis to find tasks that determine the shortest project duration is correct because critical-path tasks have no scheduling slack without affecting completion. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

22. D — use a Gantt chart to communicate tasks, durations, and schedule progress is correct because gantt charts show planned timing and progress for project activities. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

23. A — use a work breakdown structure to decompose project deliverables into work packages is correct because a wbs organizes the work required to produce project deliverables. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

24. C — write a charter that states scope, goal, business case, and roles is correct because a charter establishes the project’s purpose, boundaries, and governance. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

25. A — use the Kano model to distinguish basic expectations from delighters is correct because kano analysis distinguishes satisfaction effects of different feature types. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement consistently decisions.

26. C — translate a customer need into measurable critical-to-quality requirements is correct because ctqs operationalize customer needs into measurable characteristics. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement consistently consistently consistently consistently consistently consistently decisions.

27. B — collect voice-of-customer input through unbiased interview questions is correct because neutral prompts and representative customers reduce response bias. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement consistently consistently consistently consistently consistently decisions.

28. D — use competitive benchmarking to compare performance with direct competitors is correct because competitive benchmarking compares like-for-like external competitors. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement consistently consistently consistently consistently consistently decisions.

29. C — identify the process owner who can sustain changes after the project is correct because the process owner has authority and accountability for ongoing performance. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

30. D — use a SIPOC to clarify suppliers, inputs, process, outputs, and customers is correct because sipoc provides a high-level view of process boundaries and relationships. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

31. A — select a project with meaningful impact and a manageable scope is correct because good project selection balances value, feasibility, and scope. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement consistently consistently decisions.

32. B — include checks for missing and impossible values in a data-collection plan is correct because data-quality checks prevent avoidable errors from entering analysis. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement consistently decisions.

33. A — use a normal probability plot to assess whether normality is plausible is correct because a normal probability plot helps evaluate alignment with a normal distribution. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

34. D — distinguish control limits from specification limits is correct because control limits describe process behavior; specifications express acceptable output requirements. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement consistently consistently consistently consistently decisions.

35. C — interpret Cpk as capability adjusted for process centering is correct because cpk incorporates the process mean’s position relative to specification limits. This tool fits the stated situation. The

alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement consistently consistently decisions.

36. B — interpret Cp as potential capability based on specification width and within variation is correct because cp compares specification spread with process spread without considering centering. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

37. C — verify process stability before interpreting a capability index is correct because capability interpretation assumes a stable, predictable process. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement consistently consistently consistently consistently consistently decisions.

38. B — check measurement bias by comparing observed values with a reference value is correct because bias is the consistent difference between measurements and a reference. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

39. A — use a gauge R&R study to assess repeatability and reproducibility is correct because gauge r&r separates equipment repeatability from appraiser reproducibility. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement consistently consistently decisions.

40. D — use a scatter diagram to explore association between two quantitative variables is correct because scatter diagrams display paired values and can reveal association patterns. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

41. D — use a histogram to display the distributional shape of continuous data is correct because histograms group numerical data into intervals to reveal shape and spread. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

42. C — use standard deviation to describe typical spread around the mean is correct because standard deviation summarizes dispersion of values around their average. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement consistently decisions.

43. A — use the median when an extreme value would distort the arithmetic mean is correct because the median is resistant to the influence of extreme observations. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

44. B — use stratified sampling when important subgroups must be represented is correct because stratification ensures planned representation of meaningful subgroups. This tool fits the stated situation.

The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement consistently consistently consistently consistently decisions.

45. C — use random sampling when each unit should have an equal selection chance is correct because random sampling reduces selection bias by giving units equal opportunity. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

46. A — classify defect counts per unit as discrete attributes data is correct because counts are discrete and are commonly analyzed as attributes data. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement consistently decisions.

47. B — classify product weight as continuous variables data is correct because weight can take values on a continuum and is variables data. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement consistently consistently decisions.

48. D — describe the central limit theorem as the basis for approximate normality of sample means is correct because the theorem concerns the sampling distribution of means under stated conditions. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

49. C — use a Poisson distribution for counts of rare events per opportunity interval is correct because poisson models occurrence counts over time, area, or other exposure. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

50. A — use a binomial distribution for counts of successes in fixed trials is correct because binomial models count successes across a fixed number of similar trials. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

51. B — apply the multiplication rule for independent events by multiplying probabilities is correct because independent-event multiplication uses the product of the individual probabilities. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement consistently decisions.

52. B — separate special-cause investigation from routine common-cause management is correct because common and special causes require different management responses. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement consistently consistently consistently consistently consistently decisions.

53. D — report confidence intervals to communicate estimate uncertainty is correct because confidence intervals express a plausible range under the sampling model. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement consistently consistently consistently decisions.

54. D — use an F-test to compare variability when its assumptions are satisfied is correct because an f-test evaluates evidence about the ratio of two variances. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

55. C — state the null hypothesis before examining test results is correct because predefining hypotheses preserves the integrity of statistical inference. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement consistently consistently consistently consistently decisions.

56. A — investigate a confounder before claiming that a correlation is causal is correct because confounders can create or distort an observed relationship between variables. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

57. B — use a multi-vari study to separate positional, cyclical, and temporal variation is correct because multi-vari studies help locate sources and patterns of process variation. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

58. D — perform gap analysis by comparing current performance with a defined future state is correct because gap analysis makes the difference between present and desired performance explicit. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

59. A — use a fault tree to analyze combinations of events leading to failure is correct because fault trees use logical relationships among events that can produce failure. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

60. C — use 5 Whys to probe successive causal links behind a problem is correct because repeated why questions can move analysis beyond a symptom to causes. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

61. D — use a cause-and-effect diagram to organize potential causes by categories is correct because a cause-and-effect diagram structures possible sources of a problem. This tool fits the stated situation. The

alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement consistently decisions.

62. C — use chi-square analysis for association among categorical variables is correct because chi-square methods evaluate categorical counts against expected patterns. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement consistently consistently consistently consistently decisions.

63. B — use ANOVA to compare means across more than two groups is correct because anova evaluates whether group means differ beyond expected random variation. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

64. A — use a paired t-test when measurements are naturally matched is correct because paired designs analyze within-pair differences and account for matching. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement consistently consistently decisions.

65. A — increase test power by using a larger sample when other conditions remain fixed is correct because larger samples generally improve the ability to detect a real effect. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

66. D — define a Type II error as failing to reject a false null hypothesis is correct because type ii error is a false negative decision under the hypothesis test. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

67. C — define a Type I error as rejecting a true null hypothesis is correct because type i error is a false positive decision under the hypothesis test. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

68. B — distinguish statistical significance from practical significance is correct because practical significance depends on effect size, cost, and operational meaning. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement consistently consistently consistently consistently decisions.

69. A — interpret a small p-value as evidence against the stated null hypothesis is correct because a p-value measures compatibility of data with the null hypothesis. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

70. D — use try-storming to test a proposed solution under realistic conditions is correct because try-storming exposes practical issues through hands-on simulation and testing. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement consistently decisions.

71. C — use continuous flow to reduce waiting and handoff delays where feasible is correct because continuous flow reduces delays by moving work smoothly between steps. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

72. D — conduct a kaizen event as a focused, rapid improvement effort is correct because kaizen events concentrate team effort on a defined improvement opportunity. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

73. B — use standard work to document the best current method consistently is correct because standard work establishes a repeatable baseline that can be improved. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

74. A — use SMED principles to reduce changeover time is correct because smed separates and streamlines setup activities to shorten changeovers. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement consistently consistently consistently consistently consistently decisions.

75. C — use poka-yoke to prevent or immediately detect an error is correct because poka-yoke designs the process to avoid mistakes or expose them immediately. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

76. B — apply 5S to organize, standardize, and sustain an effective workplace is correct because 5s improves workplace organization and makes abnormal conditions easier to see. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

77. C — use kanban signals to authorize replenishment in a pull system is correct because kanban provides a visual authorization mechanism for controlled replenishment. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement consistently decisions.

78. B — use a pull system to trigger work from downstream demand is correct because pull systems link production and replenishment to actual downstream consumption. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

79. A — use a proof of concept to demonstrate that a proposed solution can work is correct because a proof of concept gives early evidence of technical feasibility. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

80. D — use a pilot test to learn before broad implementation is correct because pilots test feasibility and unintended effects on a limited scale. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement consistently decisions.

81. D — interpret an interaction when one factor’s effect depends on another factor level is correct because interactions mean the effect of one factor changes across levels of another. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

82. C — use replication to estimate experimental error and improve precision is correct because replication provides repeated independent experimental information at conditions. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement consistently consistently consistently decisions.

83. B — use randomization to reduce bias from uncontrolled influences in an experiment is correct because randomization helps spread nuisance influences across treatment conditions. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement consistently decisions.

84. A — define levels as the settings chosen for an experimental factor is correct because levels are the specific values or categories assigned to a factor. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

85. A — identify factors as controllable input variables in a designed experiment is correct because factors are input variables deliberately varied to study their effects. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

86. B — use visual management to make status and abnormalities obvious at the point of work is correct because visual management makes conditions and required actions easier to recognize. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

87. D — use total productive maintenance to improve equipment reliability through broad participation is correct because tpm integrates maintenance practices to improve availability and performance. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

88. C — apply PDCA by planning a change, trying it, checking results, then acting is correct because pdca is a disciplined cycle for learning and standardizing improvement. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

89. B — distinguish a second-party audit as an audit of a supplier by a customer is correct because second-party audits are typically customer assessments of suppliers. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

90. A — distinguish a first-party audit as an internal audit by the organization itself is correct because first-party audits are conducted internally by or for the organization. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

91. D — build a training plan that addresses the changed standard work and competence is correct because training plans build capability needed to sustain an implemented change. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

92. C — use document control to ensure workers use the current approved procedure is correct because document control maintains the availability and identity of approved instructions. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

93. C — document reaction plans in a control plan for out-of-control signals is correct because a control plan states what to monitor and how to react. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

94. B — form rational subgroups so within-group variation reflects short-term common causes is correct because rational subgrouping makes between-subgroup signals more informative. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement consistently consistently consistently decisions.

95. A — treat a point beyond a control limit as evidence of a possible special cause is correct because a control-limit signal indicates unusual process behavior worth investigating. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

96. D — use a u chart for defects per unit when opportunity varies is correct because a u chart standardizes defect counts by the varying number of units. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

97. B — use a c chart for counts of defects when opportunity area is constant is correct because a c chart monitors defect counts under a constant opportunity basis. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

98. C — use an np chart to monitor the number defective with constant sample size is correct because an np chart tracks nonconforming counts when the inspected sample size is fixed. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

99. D — use a p chart to monitor the proportion defective when sample size can vary is correct because a p chart tracks fraction nonconforming and accommodates varying sample sizes. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.

100. A — use an individuals and moving-range chart for one observation at a time is correct because individuals charts suit continuous data collected one observation per period. This tool fits the stated situation. The alternatives use an unrelated method, omit essential evidence, or apply the concept incorrectly. Appropriate use supports defensible, repeatable improvement decisions.