

CERTIFIED SIX SIGMA GREEN BELT STUDY GUIDE

PRACTICE EXAM 17 - 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 17: 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. A Green Belt is evaluating a situation in the organizational and Six Sigma concepts. Which response is most appropriate?

- A. average setup time across products in the current project setting
- B. use the longest individual cycle time in the current project setting
- C. divide defects by total output in the current project setting
- D. calculate takt time from available production time and customer demand

2. A Green Belt is evaluating a situation in the organizational and Six Sigma concepts. Which response is most appropriate?

- A. list only departmental job titles in the current project setting
- B. map material and information flow from supplier through customer
- C. draw an organization chart in the current project setting
- D. rank employees by utilization in the current project setting

3. A Green Belt is evaluating a situation in the organizational and Six Sigma concepts. Which response is most appropriate?

- A. use a spaghetti diagram to study excessive travel in a work area
- B. create a Pareto chart of defect categories in the current project setting
- C. run a capability study in the current project setting using available process evidence

D. build a responsibility matrix in the current project setting using available process evidence

4. A Green Belt is evaluating a situation in the organizational and Six Sigma concepts. Which response is most appropriate?

- A. hold safety stock at every step in the current project setting
- B. order the largest economical batch in the current project setting
- C. apply just-in-time replenishment to reduce excess inventory
- D. schedule production by monthly forecast alone in the current project setting

5. A Green Belt is evaluating a situation in the organizational and Six Sigma concepts. Which response is most appropriate?

- A. use DMADV when creating a new process that must meet CTQs
- B. repeat DMAIC without a defined process in the current project setting
- C. begin with final inspection only in the current project setting using available process evidence
- D. skip verification after design in the current project setting using available process evidence

6. A Green Belt is evaluating a situation in the organizational and Six Sigma concepts. Which response is most appropriate?

- A. average all three ratings in the current project setting using available process evidence
- B. add only severity and occurrence in the current project setting using available process evidence
- C. calculate an FMEA risk priority number from severity, occurrence, and detection
- D. subtract detection from severity in the current project setting using available process evidence

7. A Green Belt is evaluating a situation in the organizational and Six Sigma concepts. Which response is most appropriate?

- A. use process FMEA only after customer complaints in the current project setting
- B. use design FMEA to examine product failure modes before release

- C. substitute a control chart for failure analysis in the current project setting
- D. evaluate only supplier invoices in the current project setting using available process evidence

8. A Green Belt is evaluating a situation in the organizational and Six Sigma concepts. Which response is most appropriate?

- A. list every possible stakeholder complaint in the current project setting
- B. state that quality should improve in the current project setting
- C. promise a specific solution immediately in the current project setting
- D. define the project problem using baseline performance and business impact

9. A Green Belt is evaluating a situation in the organizational and Six Sigma concepts. Which response is most appropriate?

- A. limit discussion to department preferences in the current project setting
- B. choose the team's favorite problem in the current project setting
- C. start with a solution already selected in the current project setting
- D. align a project objective to a measurable business driver

10. A Green Belt is evaluating a situation in the organizational and Six Sigma concepts. Which response is most appropriate?

- A. report only monthly defect counts in the current project setting
- B. replace all measures with a single finance metric in the current project setting
- C. use a balanced scorecard to connect local measures with strategy
- D. remove customer measures from reviews in the current project setting

11. A Green Belt is evaluating a situation in the organizational and Six Sigma concepts. Which response is most appropriate?

- A. identify the system constraint before increasing upstream output

- B. maximize every resource utilization rate in the current project setting
- C. build inventory before studying the flow in the current project setting
- D. add inspection after every operation in the current project setting

12. A Green Belt is evaluating a situation in the Define phase. Which response is most appropriate?

- A. compare unrelated internal departments only in the current project setting
- B. use competitive benchmarking to compare performance with direct competitors
- C. ignore external practices in the current project setting using available process evidence
- D. collect opinions without performance criteria in the current project setting

13. A Green Belt is evaluating a situation in the Define phase. Which response is most appropriate?

- A. discard negative feedback as outliers in the current project setting
- B. ask questions that suggest the desired answer
- C. sample only satisfied customers in the current project setting
- D. collect voice-of-customer input through unbiased interview questions

14. A Green Belt is evaluating a situation in the Define phase. Which response is most appropriate?

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

15. A Green Belt is evaluating a situation in the Define phase. Which response is most appropriate?

- A. rank defects only by repair cost in the current project setting
- B. use the Kano model to distinguish basic expectations from delighters
- C. replace customer research with internal guesses in the current project setting
- D. classify every feature as mandatory in the current project setting

16. A Green Belt is evaluating a situation in the Define phase. Which response is most appropriate?

- A. omit baseline information in the current project setting using available process evidence
- B. use a charter as a detailed work instruction in the current project setting
- C. write a charter that states scope, goal, business case, and roles
- D. define a solution before the problem in the current project setting

17. A Green Belt is evaluating a situation in the Define phase. Which response is most appropriate?

- A. rank causes by frequency in the current project setting using available process evidence
- B. plot individual measurements over time in the current project setting using available process evidence
- C. use a work breakdown structure to decompose project deliverables into work packages
- D. display customer requirements in the current project setting using available process evidence

18. A Green Belt is evaluating a situation in the Define phase. Which response is most appropriate?

- A. identify root causes of defects in the current project setting using available process evidence
- B. use a Gantt chart to communicate tasks, durations, and schedule progress
- C. compare distributions to specifications in the current project setting using available process evidence
- D. assign RACI roles automatically in the current project setting using available process evidence

19. A Green Belt is evaluating a situation in the Define phase. Which response is most appropriate?

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

20. A Green Belt is evaluating a situation in the Define phase. Which response is most appropriate?

- A. include consequential metrics to detect harm caused by an improvement
- B. track only the primary target in the current project setting
- C. remove measures once results improve in the current project setting
- D. measure benefits after closing the project in the current project setting

21. A Green Belt is evaluating a situation in the Define phase. Which response is most appropriate?

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

22. A Green Belt is evaluating a situation in the Define phase. Which response is most appropriate?

- A. select the quickest suggestion in the current project setting using available process evidence
- B. choose the option with the loudest advocate in the current project setting
- C. use a prioritization matrix to compare alternatives against weighted criteria
- D. avoid defining decision criteria in the current project setting using available process evidence

23. A Green Belt is evaluating a situation in the Define phase. Which response is most appropriate?

- A. use a RACI chart to clarify who is responsible, accountable, consulted, and informed
- B. replace all roles with a single sponsor in the current project setting using available process evidence
- C. assign every person final approval in the current project setting using available process evidence
- D. avoid documenting decisions in the current project setting using available process evidence for the improvement team

24. A Green Belt is evaluating a situation in the Define phase. Which response is most appropriate?

- A. eliminate silent idea generation in the current project setting using available process evidence
- B. let the manager decide before discussion in the current project setting
- C. use unstructured debate only in the current project setting using available process evidence
- D. use nominal group technique to generate ideas and rank them independently

25. A Green Belt is evaluating a situation in the Define phase. Which response is most appropriate?

- A. seek rapid unanimous agreement in the current project setting
- B. address groupthink by inviting dissenting evidence before a decision
- C. exclude people with concerns in the current project setting
- D. treat seniority as proof in the current project setting

26. A Green Belt is evaluating a situation in the Define phase. Which response is most appropriate?

- A. use a tollgate review to verify deliverables before moving phases
- B. skip reviews to preserve momentum in the current project setting
- C. replace data with verbal updates in the current project setting
- D. close the project before implementation in the current project setting

27. A Green Belt is evaluating a situation in the Define phase. Which response is most appropriate?

- A. focus only on final financial results in the current project setting
- B. delete working files after closure in the current project setting
- C. keep results within the project team in the current project setting
- D. document lessons learned so future teams can reuse project knowledge

28. A Green Belt is evaluating a situation in the Define phase. Which response is most appropriate?

- A. use a boundary only for budgets in the current project setting
- B. assume processes stay within one department in the current project setting
- C. distinguish a process boundary from an organizational reporting boundary

D. define boundaries after implementation in the current project setting

29. A Green Belt is evaluating a situation in the Define phase. Which response is most appropriate?

- A. choose the largest problem regardless of boundaries in the current project setting
- B. select a project with meaningful impact and a manageable scope
- C. start the project before identifying a sponsor in the current project setting
- D. select work solely because data are unavailable in the current project setting

30. A Green Belt is evaluating a situation in the Define phase. Which response is most appropriate?

- A. schedule project tasks in the current project setting using available process evidence
- B. estimate correlation between variables in the current project setting using available process evidence
- C. calculate control limits in the current project setting using available process evidence
- D. use a SIPOC to clarify suppliers, inputs, process, outputs, and customers

31. A Green Belt is evaluating a situation in the Define phase. Which response is most appropriate?

- A. identify the process owner who can sustain changes after the project
- B. assign ownership to the newest team member in the current project setting
- C. leave ownership undefined in the current project setting using available process evidence
- D. make the facilitator permanent owner in the current project setting using available process evidence

32. A Green Belt is evaluating a situation in the Measure phase. Which response is most appropriate?

- A. model continuous normal measurements only in the current project setting using available process evidence
- B. model time between rare events in the current project setting using available process evidence
- C. use a binomial distribution for counts of successes in fixed trials
- D. model ranked survey categories in the current project setting using available process evidence

33. A Green Belt is evaluating a situation in the Measure phase. Which response is most appropriate?

- A. compare paired observations in the current project setting using available process evidence
- B. model a continuous measurement mean in the current project setting using available process evidence
- C. use a Poisson distribution for counts of rare events per opportunity interval
- D. rank ordered categories in the current project setting using available process evidence

34. A Green Belt is evaluating a situation in the Measure phase. Which response is most appropriate?

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

35. A Green Belt is evaluating a situation in the Measure phase. Which response is most appropriate?

- A. classify it as nominal data in the current project setting
- B. classify product weight as continuous variables data
- C. treat it as a count of defects
- D. label it an ordinal category in the current project setting

36. A Green Belt is evaluating a situation in the Measure phase. Which response is most appropriate?

- A. classify defect counts per unit as discrete attributes data
- B. treat them as ratio measurements only in the current project setting
- C. assume they are continuous observations in the current project setting
- D. label them interval-scale measurements in the current project setting

37. A Green Belt is evaluating a situation in the Measure phase. Which response is most appropriate?

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

38. A Green Belt is evaluating a situation in the Measure phase. Which response is most appropriate?

- A. treat every subgroup as identical in the current project setting
- B. sample only the largest subgroup in the current project setting
- C. remove subgroup labels before sampling in the current project setting
- D. use stratified sampling when important subgroups must be represented

39. A Green Belt is evaluating a situation in the Measure phase. Which response is most appropriate?

- A. use the median when an extreme value would distort the arithmetic mean
- B. replace all values with the largest value in the current project setting
- C. use the range as a location measure in the current project setting
- D. discard the entire data set in the current project setting using available process evidence

40. A Green Belt is evaluating a situation in the Measure phase. Which response is most appropriate?

- A. treat it as a specification limit in the current project setting
- B. use it to identify the most frequent category in the current project setting
- C. use standard deviation to describe typical spread around the mean
- D. use it as a sample size in the current project setting

41. A Green Belt is evaluating a situation in the Measure phase. Which response is most appropriate?

- A. show task dependencies in the current project setting using available process evidence

- B. use a histogram to display the distributional shape of continuous data
- C. assign team accountability in the current project setting using available process evidence
- D. document customer interviews in the current project setting using available process evidence

42. A Green Belt is evaluating a situation in the Measure phase. Which response is most appropriate?

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

43. A Green Belt is evaluating a situation in the Measure phase. Which response is most appropriate?

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

44. A Green Belt is evaluating a situation in the Measure phase. Which response is most appropriate?

- A. check measurement bias by comparing observed values with a reference value
- B. compare one operator with another only in the current project setting
- C. use a Pareto chart of defects in the current project setting
- D. calculate takt time in the current project setting using available process evidence

45. A Green Belt is evaluating a situation in the Measure phase. Which response is most appropriate?

- A. calculate Cp from specification width alone in the current project setting
- B. verify process stability before interpreting a capability index
- C. ignore time-order behavior in the current project setting
- D. use customer surveys as control limits in the current project setting

46. A Green Belt is evaluating a situation in the Measure phase. Which response is most appropriate?

- A. use C_p to count defects directly in the current project setting using available process evidence
- B. treat C_p as a centering measure only in the current project setting
- C. interpret C_p as potential capability based on specification width and within variation
- D. equate C_p with customer satisfaction in the current project setting using available process evidence

47. A Green Belt is evaluating a situation in the Measure phase. Which response is most appropriate?

- A. ignore the nearest specification limit in the current project setting
- B. use C_{pk} only for attribute counts in the current project setting
- C. treat C_{pk} as a project schedule metric in the current project setting
- D. interpret C_{pk} as capability adjusted for process centering

48. A Green Belt is evaluating a situation in the Measure phase. Which response is most appropriate?

- A. use both terms interchangeably in the current project setting
- B. set control limits equal to customer requirements
- C. treat specifications as calculated from process data
- D. distinguish control limits from specification limits in the current project setting

49. A Green Belt is evaluating a situation in the Measure phase. Which response is most appropriate?

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

50. A Green Belt is evaluating a situation in the Measure phase. Which response is most appropriate?

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

51. A Green Belt is evaluating a situation in the Measure phase. Which response is most appropriate?

- A. use a process map to identify handoffs, rework loops, and missing steps
- B. rank customers by revenue in the current project setting using available process evidence
- C. calculate a p-value in the current project setting using available process evidence
- D. set control limits from specifications in the current project setting using available process evidence

52. A Green Belt is evaluating a situation in the Analyze phase. Which response is most appropriate?

- A. avoid considering effect size in the current project setting
- B. assume a small p-value guarantees business value
- C. distinguish statistical significance from practical significance in the current project setting
- D. accept every significant result without context in the current project setting

53. A Green Belt is evaluating a situation in the Analyze phase. Which response is most appropriate?

- A. accepting a false null hypothesis in the current project setting using available process evidence
- B. define a Type I error as rejecting a true null hypothesis
- C. failing to collect data in the current project setting using available process evidence
- D. choosing a small sample in the current project setting using available process evidence

54. A Green Belt is evaluating a situation in the Analyze phase. Which response is most appropriate?

- A. collecting more observations in the current project setting using available process evidence for the improvement team
- B. rejecting a true null hypothesis in the current project setting using available process evidence
- C. using a two-sided test in the current project setting using available process evidence
- D. define a Type II error as failing to reject a false null hypothesis

55. A Green Belt is evaluating a situation in the Analyze phase. Which response is most appropriate?

- A. increase test power by using a larger sample when other conditions remain fixed
- B. increase random measurement error in the current project setting using available process evidence
- C. raise variation deliberately in the current project setting using available process evidence for the improvement team
- D. remove relevant observations in the current project setting using available process evidence for the improvement team

56. A Green Belt is evaluating a situation in the Analyze phase. Which response is most appropriate?

- A. test a single proportion only in the current project setting
- B. compare unrelated groups with no pairing in the current project setting
- C. use a paired t-test when measurements are naturally matched
- D. compare only categorical frequencies in the current project setting

57. A Green Belt is evaluating a situation in the Analyze phase. Which response is most appropriate?

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

58. A Green Belt is evaluating a situation in the Analyze phase. Which response is most appropriate?

- A. estimate a continuous regression slope in the current project setting
- B. use chi-square analysis for association among categorical variables
- C. compare paired continuous means in the current project setting
- D. set an individuals-chart limit in the current project setting

59. A Green Belt is evaluating a situation in the Analyze phase. Which response is most appropriate?

- A. use a cause-and-effect diagram to organize potential causes by categories
- B. rank actions by project duration in the current project setting
- C. calculate sample statistics in the current project setting using available process evidence
- D. document training attendance in the current project setting using available process evidence

60. A Green Belt is evaluating a situation in the Analyze phase. Which response is most appropriate?

- A. replace data collection with opinions in the current project setting using available process evidence
- B. select the most frequent defect automatically in the current project setting
- C. use 5 Whys to probe successive causal links behind a problem
- D. set a specification limit in the current project setting using available process evidence

61. A Green Belt is evaluating a situation in the Analyze phase. Which response is most appropriate?

- A. assign customer priorities in the current project setting using available process evidence
- B. display a future-state value stream in the current project setting using available process evidence
- C. use a fault tree to analyze combinations of events leading to failure
- D. calculate a capability index in the current project setting using available process evidence

62. A Green Belt is evaluating a situation in the Analyze phase. Which response is most appropriate?

- A. estimate a p-value from current data in the current project setting using available process evidence
- B. perform gap analysis by comparing current performance with a defined future state
- C. replace a project charter in the current project setting using available process evidence

D. choose a sampling method in the current project setting using available process evidence

63. A Green Belt is evaluating a situation in the Analyze phase. Which response is most appropriate?

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

64. A Green Belt is evaluating a situation in the Analyze phase. Which response is most appropriate?

- A. investigate a confounder before claiming that a correlation is causal
- B. ignore variables outside the model in the current project setting
- C. assume a high correlation is proof in the current project setting
- D. remove contradictory observations in the current project setting using available process evidence

65. A Green Belt is evaluating a situation in the Analyze phase. Which response is most appropriate?

- A. state the null hypothesis before examining test results
- B. select the conclusion first in the current project setting
- C. change the hypothesis after seeing p-value in the current project setting
- D. omit the comparison value in the current project setting

66. A Green Belt is evaluating a situation in the Analyze phase. Which response is most appropriate?

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

67. A Green Belt is evaluating a situation in the Analyze phase. Which response is most appropriate?

- A. treat the interval as a control limit
- B. replace estimates with a single exact claim
- C. report confidence intervals to communicate estimate uncertainty
- D. avoid reporting sample size in the current project setting

68. A Green Belt is evaluating a situation in the Analyze phase. Which response is most appropriate?

- A. adjust the process after every point in the current project setting
- B. separate special-cause investigation from routine common-cause management
- C. treat all variation as operator error in the current project setting
- D. ignore stable patterns in the current project setting

69. A Green Belt is evaluating a situation in the Analyze phase. Which response is most appropriate?

- A. treat a scatterplot as experimental proof in the current project setting
- B. assume association proves a cause in the current project setting
- C. ignore possible confounding variables in the current project setting
- D. distinguish correlation from causation when two variables move together

70. A Green Belt is evaluating a situation in the Improve phase. Which response is most appropriate?

- A. add more factors without runs in the current project setting
- B. repeat a reading only after failure in the current project setting
- C. use replication to estimate experimental error and improve precision
- D. replace randomization with inspection in the current project setting

71. A Green Belt is evaluating a situation in the Improve phase. Which response is most appropriate?

- A. interpret an interaction when one factor's effect depends on another factor level
- B. assume main effects always tell the full story in the current project setting
- C. ignore nonparallel patterns on an interaction plot in the current project setting
- D. treat factors as unrelated by definition in the current project setting using available process evidence

72. A Green Belt is evaluating a situation in the Improve phase. Which response is most appropriate?

- A. implement globally without testing in the current project setting
- B. use a pilot test to learn before broad implementation
- C. wait for final audit findings in the current project setting
- D. eliminate measures during rollout in the current project setting

73. A Green Belt is evaluating a situation in the Improve phase. Which response is most appropriate?

- A. avoid defining acceptance criteria in the current project setting using available process evidence
- B. substitute a proof of concept for a control plan in the current project setting
- C. declare success before testing in the current project setting using available process evidence
- D. use a proof of concept to demonstrate that a proposed solution can work

74. A Green Belt is evaluating a situation in the Improve phase. Which response is most appropriate?

- A. use a pull system to trigger work from downstream demand
- B. push large batches based solely on forecasts in the current project setting
- C. maximize work-in-process inventory in the current project setting using available process evidence
- D. schedule every station independently in the current project setting using available process evidence

75. A Green Belt is evaluating a situation in the Improve phase. Which response is most appropriate?

- A. use kanban as a root-cause tool in the current project setting
- B. use kanban signals to authorize replenishment in a pull system
- C. replace visual signals with monthly forecasts in the current project setting

D. increase batch sizes automatically in the current project setting using available process evidence

76. A Green Belt is evaluating a situation in the Improve phase. Which response is most appropriate?

- A. treat it as a financial accounting method in the current project setting
- B. use 5S only for final inspection in the current project setting
- C. apply 5S to organize, standardize, and sustain an effective workplace
- D. apply it only after a defect occurs in the current project setting

77. A Green Belt is evaluating a situation in the Improve phase. Which response is most appropriate?

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

78. A Green Belt is evaluating a situation in the Improve phase. Which response is most appropriate?

- A. combine setup with customer inspection in the current project setting
- B. increase lot size before studying setup in the current project setting
- C. use SMED principles to reduce changeover time
- D. delay setup work until the machine stops

79. A Green Belt is evaluating a situation in the Improve phase. Which response is most appropriate?

- A. use standard work to document the best current method consistently
- B. allow each operator to invent a method in the current project setting
- C. replace training with memory in the current project setting using available process evidence
- D. treat standards as permanent and unchangeable in the current project setting

80. A Green Belt is evaluating a situation in the Improve phase. Which response is most appropriate?

- A. wait for a major capital investment in the current project setting
- B. replace all projects with annual planning in the current project setting
- C. avoid cross-functional participation in the current project setting using available process evidence
- D. conduct a kaizen event as a focused, rapid improvement effort

81. A Green Belt is evaluating a situation in the Improve phase. Which response is most appropriate?

- A. increase queues to protect utilization in the current project setting using available process evidence
- B. use continuous flow to reduce waiting and handoff delays where feasible
- C. add inspection after every step in the current project setting using available process evidence
- D. separate linked operations unnecessarily in the current project setting using available process evidence

82. A Green Belt is evaluating a situation in the Improve phase. Which response is most appropriate?

- A. eliminate contingency plans in the current project setting using available process evidence
- B. approve a solution without user testing in the current project setting
- C. replace pilot data with opinions in the current project setting
- D. use try-storming to test a proposed solution under realistic conditions

83. A Green Belt is evaluating a situation in the Improve phase. Which response is most appropriate?

- A. identify factors as controllable input variables in a designed experiment
- B. define factors as customer complaints in the current project setting
- C. treat factors as output responses in the current project setting
- D. use factors only for scheduling in the current project setting

84. A Green Belt is evaluating a situation in the Improve phase. Which response is most appropriate?

- A. use levels as defect counts in the current project setting
- B. treat levels as response measurements in the current project setting
- C. define levels as the settings chosen for an experimental factor
- D. assume each factor has one setting in the current project setting

85. A Green Belt is evaluating a situation in the Improve phase. Which response is most appropriate?

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

86. A Green Belt is evaluating a situation in the Control phase. Which response is most appropriate?

- A. use a p chart only for constant counts in the current project setting
- B. use an np chart to monitor the number defective with constant sample size
- C. use a u chart for individual values in the current project setting using available process evidence
- D. use an R chart for defectives in the current project setting using available process evidence

87. A Green Belt is evaluating a situation in the Control phase. Which response is most appropriate?

- A. use an X-bar chart for nonconformities in the current project setting using available process evidence
- B. use a u chart only for constant opportunity in the current project setting
- C. use a p chart for defect counts in the current project setting using available process evidence
- D. use a c chart for counts of defects when opportunity area is constant

88. A Green Belt is evaluating a situation in the Control phase. Which response is most appropriate?

- A. use an np chart for defect rates in the current project setting

- B. use a c chart for varying unit sizes in the current project setting
- C. use a u chart for defects per unit when opportunity varies
- D. use an individuals chart for counts in the current project setting

89. A Green Belt is evaluating a situation in the Control phase. Which response is most appropriate?

- A. treat a point beyond a control limit as evidence of a possible special cause
- B. adjust the process before investigating in the current project setting using available process evidence
- C. treat it as a specification violation automatically in the current project setting using available process evidence
- D. ignore the point if the average is on target in the current project setting

90. A Green Belt is evaluating a situation in the Control phase. Which response is most appropriate?

- A. mix observations from unrelated conditions in the current project setting
- B. form rational subgroups so within-group variation reflects short-term common causes
- C. group data only by convenient calendar weeks in the current project setting
- D. use subgroups to hide variation in the current project setting

91. A Green Belt is evaluating a situation in the Control phase. Which response is most appropriate?

- A. omit responsibility for response in the current project setting using available process evidence
- B. record only the target value in the current project setting
- C. document reaction plans in a control plan for out-of-control signals
- D. remove data collection requirements in the current project setting using available process evidence

92. A Green Belt is evaluating a situation in the Control phase. Which response is most appropriate?

- A. delete training records in the current project setting using available process evidence
- B. allow uncontrolled local copies in the current project setting using available process evidence
- C. replace revision history with verbal updates in the current project setting

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

93. A Green Belt is evaluating a situation in the Control phase. Which response is most appropriate?

- A. build a training plan that addresses the changed standard work and competence
- B. announce the change without practice in the current project setting using available process evidence
- C. train only the project sponsor in the current project setting using available process evidence
- D. delay training until audit failure in the current project setting using available process evidence

94. A Green Belt is evaluating a situation in the Control phase. Which response is most appropriate?

- A. define it as an audit by a customer in the current project setting
- B. distinguish a first-party audit as an internal audit by the organization itself
- C. define it as certification-body audit in the current project setting using available process evidence
- D. treat it as an informal team meeting in the current project setting

95. A Green Belt is evaluating a situation in the Control phase. Which response is most appropriate?

- A. treat it as a financial review in the current project setting using available process evidence
- B. define it as an internal audit only in the current project setting using available process evidence
- C. define it as an independent certification audit in the current project setting using available process evidence
- D. distinguish a second-party audit as an audit of a supplier by a customer

96. A Green Belt is evaluating a situation in the Control phase. Which response is most appropriate?

- A. use PDCA only after a failure in the current project setting using available process evidence
- B. act before planning or checking in the current project setting using available process evidence
- C. apply PDCA by planning a change, trying it, checking results, then acting
- D. replace learning with one-time implementation in the current project setting using available process evidence

97. A Green Belt is evaluating a situation in the Control phase. Which response is most appropriate?

- A. eliminate preventive maintenance records in the current project setting using available process evidence
- B. leave maintenance only to emergency repair in the current project setting
- C. treat operators as disconnected from equipment care in the current project setting
- D. use total productive maintenance to improve equipment reliability through broad participation

98. A Green Belt is evaluating a situation in the Control phase. Which response is most appropriate?

- A. replace standards with verbal reminders in the current project setting using available process evidence
- B. hide performance data in monthly reports in the current project setting using available process evidence
- C. use visual management to make status and abnormalities obvious at the point of work
- D. use visuals only for decoration in the current project setting using available process evidence

99. A Green Belt is evaluating a situation in the Control phase. Which response is most appropriate?

- A. use a p chart for individual weights in the current project setting
- B. use an X-bar and R chart for rational subgroups of continuous measurements
- C. use a c chart for sample means in the current project setting
- D. use an np chart for ranges in the current project setting using available process evidence

100. A Green Belt is evaluating a situation in the Control phase. Which response is most appropriate?

- A. use an individuals and moving-range chart for one observation at a time
- B. use an X-bar chart with no subgroups in the current project setting
- C. use a p chart for dimensions in the current project setting using available process evidence
- D. use a c chart for sample totals in the current project setting

Practice Exam 17: Answer Key and Explanations

1. **D** — calculate takt time from available production time and customer demand is correct because takt time expresses the pace needed to meet customer demand. This response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.
2. **B** — 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement consistently decisions.
3. **A** — use a spaghetti diagram to study excessive travel in a work area is correct because a spaghetti diagram traces movement through physical space. This response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.
4. **C** — apply just-in-time replenishment to reduce excess inventory is correct because just-in-time replenishes based on actual consumption and flow needs. This response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement consistently consistently consistently decisions.
5. **A** — 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.
6. **C** — calculate an FMEA risk priority number from severity, occurrence, and detection is correct because an fmea rpn combines severity, occurrence, and detection ratings. This response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.
7. **B** — use design FMEA to examine product failure modes before release is correct because design fmea targets product-design risks before production begins. This response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement consistently decisions.
8. **D** — define the project problem using baseline performance and business impact is correct because a useful problem statement is factual, bounded, and measurable. This response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

9. D — align a project objective to a measurable business driver is correct because six sigma projects should connect improvement work to organizational value. This response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

10. C — use a balanced scorecard to connect local measures with strategy is correct because a balanced scorecard links operational indicators to strategic outcomes. This response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

11. A — identify the system constraint before increasing upstream output is correct because theory of constraints focuses attention on the limiting resource. This response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement consistently consistently decisions.

12. B — use competitive benchmarking to compare performance with direct competitors is correct because competitive benchmarking compares like-for-like external competitors. This response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement consistently consistently consistently consistently decisions.

13. D — collect voice-of-customer input through unbiased interview questions is correct because neutral prompts and representative customers reduce response bias. This response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement consistently consistently consistently consistently decisions.

14. A — translate a customer need into measurable critical-to-quality requirements is correct because ctqs operationalize customer needs into measurable characteristics. This response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement consistently consistently consistently consistently decisions.

15. B — use the Kano model to distinguish basic expectations from delighters is correct because kano analysis distinguishes satisfaction effects of different feature types. This response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

16. 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

17. C — 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 response fits the

scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

18. B — 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

19. D — 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

20. A — include consequential metrics to detect harm caused by an improvement is correct because consequential metrics guard against shifting a problem elsewhere. This response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement consistently decisions.

21. B — use an affinity diagram to organize a large set of related ideas is correct because affinity diagrams group ideas into natural themes. This response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

22. C — use a prioritization matrix to compare alternatives against weighted criteria is correct because a prioritization matrix makes tradeoffs explicit and repeatable. This response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement consistently decisions.

23. A — 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

24. D — use nominal group technique to generate ideas and rank them independently is correct because nominal group technique balances individual input with structured ranking. This response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

25. B — address groupthink by inviting dissenting evidence before a decision is correct because constructive dissent helps teams test assumptions and avoid groupthink. This response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement consistently decisions.

26. A — use a tollgate review to verify deliverables before moving phases is correct because tollgates provide structured sponsor review of phase deliverables. This response fits the scenario. The other

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

27. D — document lessons learned so future teams can reuse project knowledge is correct because lessons learned transfer useful knowledge beyond the completed project. This response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

28. C — distinguish a process boundary from an organizational reporting boundary is correct because processes often cross functions, so their boundaries must reflect actual flow. This response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

29. B — select a project with meaningful impact and a manageable scope is correct because good project selection balances value, feasibility, and scope. This response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement consistently 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

31. A — 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

32. C — 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

33. 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

34. 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

35. B — classify product weight as continuous variables data is correct because weight can take values on a continuum and is variables data. This response fits the scenario. The other choices use an unrelated

method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement consistently decisions.

36. A — classify defect counts per unit as discrete attributes data is correct because counts are discrete and are commonly analyzed as attributes data. This response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

37. B — 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

38. D — use stratified sampling when important subgroups must be represented is correct because stratification ensures planned representation of meaningful subgroups. This response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement consistently consistently consistently decisions.

39. 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

40. C — use standard deviation to describe typical spread around the mean is correct because standard deviation summarizes dispersion of values around their average. This response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

41. B — 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

42. C — 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

43. D — use a gauge R&R study to assess repeatability and reproducibility is correct because gauge R&R separates equipment repeatability from appraiser reproducibility. This response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement consistently decisions.

44. A — 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 response fits the

scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

45. B — verify process stability before interpreting a capability index is correct because capability interpretation assumes a stable, predictable process. This response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement consistently consistently consistently consistently decisions.

46. C — 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

47. D — interpret Cpk as capability adjusted for process centering is correct because cpk incorporates the process mean's position relative to specification limits. This response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement consistently decisions.

48. D — distinguish control limits from specification limits is correct because control limits describe process behavior; specifications express acceptable output requirements. This response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement consistently consistently consistently decisions.

49. 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

50. 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

51. A — use a process map to identify handoffs, rework loops, and missing steps is correct because process mapping exposes how work actually moves through a process. This response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

52. C — distinguish statistical significance from practical significance is correct because practical significance depends on effect size, cost, and operational meaning. This response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement consistently consistently consistently decisions.

53. B — 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 response fits the scenario. The other choices use an

unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

54. 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

55. 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

56. C — use a paired t-test when measurements are naturally matched is correct because paired designs analyze within-pair differences and account for matching. This response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement consistently decisions.

57. D — use ANOVA to compare means across more than two groups is correct because anova evaluates whether group means differ beyond expected random variation. This response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

58. B — use chi-square analysis for association among categorical variables is correct because chi-square methods evaluate categorical counts against expected patterns. This response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement consistently consistently consistently decisions.

59. A — 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

61. C — 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

62. B — 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

response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

63. D — 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

64. 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

65. A — state the null hypothesis before examining test results is correct because predefining hypotheses preserves the integrity of statistical inference. This response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement consistently consistently consistently decisions.

66. 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

67. C — report confidence intervals to communicate estimate uncertainty is correct because confidence intervals express a plausible range under the sampling model. This response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement consistently consistently decisions.

68. B — separate special-cause investigation from routine common-cause management is correct because common and special causes require different management responses. This response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement consistently consistently consistently consistently decisions.

69. D — distinguish correlation from causation when two variables move together is correct because association alone cannot establish that one variable causes another. This response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement consistently decisions.

70. C — use replication to estimate experimental error and improve precision is correct because replication provides repeated independent experimental information at conditions. This response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement consistently consistently decisions.

71. A — 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

72. B — use a pilot test to learn before broad implementation is correct because pilots test feasibility and unintended effects on a limited scale. This response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

73. D — 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

74. A — use a pull system to trigger work from downstream demand is correct because pull systems link production and replenishment to actual downstream consumption. This response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

75. B — use kanban signals to authorize replenishment in a pull system is correct because kanban provides a visual authorization mechanism for controlled replenishment. This response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

76. C — 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

77. B — 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

78. C — use SMED principles to reduce changeover time is correct because smed separates and streamlines setup activities to shorten changeovers. This response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement consistently consistently consistently decisions.

79. A — use standard work to document the best current method consistently is correct because standard work establishes a repeatable baseline that can be improved. This response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

80. 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

81. B — 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

82. 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

83. 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

84. C — 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

85. A — use randomization to reduce bias from uncontrolled influences in an experiment is correct because randomization helps spread nuisance influences across treatment conditions. This response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

86. B — 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

87. D — 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

88. C — 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

89. 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

90. 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement consistently consistently decisions.

91. 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

92. D — 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

93. A — 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

94. B — 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

95. D — 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

96. 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

97. 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

98. C — 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.

99. B — use an X-bar and R chart for rational subgroups of continuous measurements is correct because x-bar and r charts monitor subgroup averages and within-subgroup ranges. This response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and 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 response fits the scenario. The other choices use an unrelated method, omit essential evidence, or apply the concept incorrectly. Proper use supports defensible and repeatable improvement decisions.