

EXAM 9: LEAN SIX SIGMA YELLOW BELT SIMULATION

(100 QUESTIONS)

This 100-question practice simulation is aligned to the ASQ Certified Six Sigma Yellow Belt Body of Knowledge, proportionally scaled from its 80 scored-question blueprint. Allow 2 hours and 18 minutes. Choose the single best answer for each question. This is an original study aid, not an ASQ examination.

1. At a hospital registration process, the improvement team considers this question: What is the primary purpose of Six Sigma?
 - A. Reduce process variation and defects
 - B. Increase individual inspection effort
 - C. Maximize inventory availability
 - D. Replace all managerial judgment

2. For an e-commerce returns process, select the best response to this question: Which sequence names the DMAIC improvement methodology?
 - A. Design, Manage, Assess, Integrate, Close
 - B. Define, Measure, Analyze, Improve, Control
 - C. Develop, Monitor, Act, Inspect, Correct
 - D. Discover, Model, Approve, Implement, Calibrate

3. During a food-packaging improvement project, determine the correct answer: In Lean thinking, value is best defined as what the customer is willing to pay for.
 - A. Any activity performed by a trained employee
 - B. The number of process steps documented
 - C. The amount of inventory held for demand

D. A product feature or activity that meets customer needs

4. At a call-center improvement huddle, the team needs to answer: Which example is a poka-yoke?

A. A monthly report showing defect counts by product

B. A warehouse area maintained for extra stock

C. A connector that can be inserted only in the correct orientation

D. A dashboard that summarizes monthly revenue performance

5. For a banking-service process, identify the best Lean Six Sigma response: What is the principal purpose of a kanban signal?

A. Assign annual performance ratings

B. Calculate a process capability index

C. Authorize replenishment based on actual consumption

D. Approve changes to a work instruction

6. During an aircraft-maintenance support project, consider the following question: Which role typically owns the process after a project closes?

A. Yellow Belt

B. Process owner

C. External auditor

D. Facilitator

7. In a public-service workflow review, choose the best answer: Which statement best describes a Yellow Belt's contribution?

A. Supports improvement work with basic tools and local knowledge

B. Leads enterprise-wide strategy deployment across all business units

C. Approves all capital expenditures for improvement projects

D. Certifies measurement devices used in production processes

8. For a distribution-center process, the Yellow Belt must determine: A project champion is primarily responsible for which activity?

- A. Recording each data point on a check sheet
- B. Calibrating every measurement instrument
- C. Writing all standard operating procedures
- D. Removing barriers and aligning the project with business priorities

9. During a software-release retrospective, identify the most accurate response: What is a cross-functional team?

- A. A team that works only across different shifts
- B. A group created only for financial decisions
- C. A team composed solely of senior leaders
- D. A team with members from different functions involved in a process

10. At a university enrollment improvement meeting, the team asks: During which team-development stage do members establish working norms?

- A. Norming
- B. Forming
- C. Storming
- D. Adjourning

11. At a hospital registration process, the improvement team considers this question: Which tool gives every participant an initial equal opportunity to generate and rank ideas?

- A. A control chart
- B. A SIPOC diagram

- C. Nominal group technique
- D. A scatter diagram

12. For an e-commerce returns process, select the best response to this question: What is the most useful purpose of a meeting agenda?

- A. Document final corrective actions
- B. Clarify objectives, sequence, and expected preparation
- C. Display process capability results
- D. Replace the project charter

13. During a food-packaging improvement project, determine the correct answer: Which quality tool is best for prioritizing the most frequent defect categories?

- A. Scatter diagram
- B. Control plan
- C. Pareto chart
- D. Affinity diagram

14. At a call-center improvement huddle, the team needs to answer: A fishbone diagram is most often used to do what?

- A. Monitor a process over time
- B. Organize possible causes of a problem
- C. Calculate a sample mean
- D. Schedule project tasks

15. For a banking-service process, identify the best Lean Six Sigma response: Which tool displays the sequence of activities and decision points in a process?

- A. Flowchart

- B. Histogram
- C. Matrix chart
- D. Run chart

16. During an aircraft-maintenance support project, consider the following question: What does a run chart show?

- A. The relationship between two variables
- B. The ranked frequency of categories
- C. The required project resources
- D. Data values plotted in time order

17. In a public-service workflow review, choose the best answer: Which tool is designed to record counts as observations occur?

- A. Gantt chart
- B. FMEA
- C. Check sheet
- D. SIPOC

18. For a distribution-center process, the Yellow Belt must determine: A scatter diagram is most appropriate when a team wants to study what?

- A. Whether two variables appear related
- B. How tasks depend on one another
- C. Which defects occur most often
- D. Who is responsible for approvals

19. During a software-release retrospective, identify the most accurate response: A histogram is used primarily to display what?

- A. The sequence of process steps
- B. A project communication schedule
- C. A list of corrective actions
- D. The distribution of numerical data

20. At a university enrollment improvement meeting, the team asks: What does DPU measure?

- A. Defects per million opportunities
- B. Defects found per unit inspected
- C. The percentage of units shipped
- D. The time needed for one cycle

21. At a hospital registration process, the improvement team considers this question: DPMO is calculated using defects, units, and what additional quantity?

- A. Number of operators assigned
- B. Opportunities for defects per unit
- C. Total production hours
- D. Cost of rework per unit

22. For an e-commerce returns process, select the best response to this question: Rolled throughput yield is most useful for showing what?

- A. The average defect count per unit
- B. The cost of each inspection activity
- C. The maximum process cycle time
- D. The probability that a unit passes all steps without rework

23. During a food-packaging improvement project, determine the correct answer: Cycle time is the elapsed time required to do what?

- A. Complete one unit or one process cycle
- B. Train a project team member
- C. Inspect a sample lot
- D. Approve a control plan

24. At a call-center improvement huddle, the team needs to answer: Cost of poor quality includes which cost?

- A. Investment in preventive training
- B. Revenue from satisfied customers
- C. Scrap, rework, and warranty expense
- D. The salary of a project sponsor

25. For a banking-service process, identify the best Lean Six Sigma response: Which situation is most suitable for a DMAIC project?

- A. A chronic process problem with measurable performance
- B. A one-time personal scheduling conflict
- C. A task with no identifiable customer
- D. A fully designed product awaiting launch

26. During an aircraft-maintenance support project, consider the following question: Voice of the customer is best described as

- A. a list of internal audit findings
- B. customer needs, expectations, and perceptions
- C. a manager's personal improvement ideas
- D. a record of supplier invoices

27. In a public-service workflow review, choose the best answer: A critical-to-quality characteristic should be

- A. an unverified opinion from one employee
- B. a financial goal unrelated to customers
- C. a measurable requirement important to the customer
- D. a broad statement without a target

28. For a distribution-center process, the Yellow Belt must determine: Which project selection criterion is most important?

- A. The largest number of possible tools
- B. The longest available project duration
- C. The preference of one team member
- D. Clear business value and a manageable scope

29. During a software-release retrospective, identify the most accurate response: A stakeholder analysis helps a team identify

- A. only the project's final financial result
- B. the exact control limits for a process
- C. people affected by the project and their influence
- D. the population standard deviation

30. At a university enrollment improvement meeting, the team asks: In a SIPOC, the letter I represents

- A. inspection points after shipment
- B. individual performance measures
- C. improvement actions selected
- D. inputs required by the process

31. At a hospital registration process, the improvement team considers this question: Which SIPOC element identifies the recipient of a process output?

- A. Supplier
- B. Customer
- C. Input
- D. Process

32. For an e-commerce returns process, select the best response to this question: What is the best problem statement?

- A. A factual description of the current performance gap
- B. A proposed solution with a promised savings
- C. A general complaint without data
- D. A list of all possible root causes

33. During a food-packaging improvement project, determine the correct answer: Which item belongs in a project charter?

- A. A final verified root cause
- B. A completed control chart
- C. Scope boundaries
- D. A vendor purchase order

34. At a call-center improvement huddle, the team needs to answer: A well-written project goal should be

- A. identical to the problem statement
- B. limited to a preferred solution
- C. unrelated to a baseline
- D. specific, measurable, and time-bounded

35. For a banking-service process, identify the best Lean Six Sigma response: Project scope is used to define

- A. what is included and excluded from the effort
- B. the exact sample size for every study
- C. the mathematical distribution of data
- D. the final layout of a report

36. During an aircraft-maintenance support project, consider the following question: Baseline data are collected primarily to

- A. prove the final solution is correct
- B. describe current performance before changes
- C. replace customer requirements
- D. estimate employee satisfaction only

37. In a public-service workflow review, choose the best answer: What is a communication plan designed to specify?

- A. The ranked list of defect causes
- B. Audience, message, method, timing, and owner
- C. The calculation of process yield
- D. The final equipment specification

38. For a distribution-center process, the Yellow Belt must determine: A work breakdown structure is used to

- A. decompose project work into manageable deliverables
- B. plot data over time
- C. rank failure modes by risk
- D. measure customer satisfaction

39. During a software-release retrospective, identify the most accurate response: A Gantt chart is most useful for

- A. testing a hypothesis about means
- B. showing defect-category frequencies
- C. displaying tasks against a calendar timeline
- D. calculating gauge repeatability

40. At a university enrollment improvement meeting, the team asks: An activity network diagram is especially helpful for

- A. ranking customer needs by importance
- B. displaying a data distribution
- C. selecting an inspection sample
- D. showing task dependencies and possible critical paths

41. At a hospital registration process, the improvement team considers this question: An affinity diagram is used to

- A. group many ideas into natural themes
- B. calculate a risk priority number
- C. measure process stability
- D. identify a regression slope

42. For an e-commerce returns process, select the best response to this question: A matrix chart helps a team examine

- A. the time order of observations
- B. the shape of a distribution
- C. relationships between sets of factors
- D. the exact project schedule

43. During a food-packaging improvement project, determine the correct answer: A tollgate review occurs mainly to

- A. approve individual vacation schedules
- B. replace all team meetings
- C. select a single root cause immediately
- D. verify readiness before moving to the next DMAIC phase

44. At a call-center improvement huddle, the team needs to answer: The arithmetic mean is calculated by

- A. choosing the most frequent observation
- B. summing observations and dividing by their count
- C. selecting the middle ranked observation
- D. subtracting the minimum from the maximum

45. For a banking-service process, identify the best Lean Six Sigma response: The median is the

- A. most frequently occurring value
- B. middle value after data are ordered
- C. average of all values without ordering
- D. difference between highest and lowest values

46. During an aircraft-maintenance support project, consider the following question: The mode is the

- A. middle value in a sorted list
- B. average distance from the mean
- C. most frequently occurring value or category
- D. largest observation in a sample

47. In a public-service workflow review, choose the best answer: Range is calculated as

- A. sum divided by number of observations
- B. middle value after sorting

- C. square root of the variance
- D. maximum value minus minimum value

48. For a distribution-center process, the Yellow Belt must determine: Standard deviation describes

- A. typical spread of observations around the mean
- B. the most common category
- C. the number of defects per unit
- D. the elapsed process time

49. During a software-release retrospective, identify the most accurate response: Variance is

- A. the same thing as the median
- B. the count of observations collected
- C. the squared measure of spread around the mean
- D. the percentage of units passing inspection

50. At a university enrollment improvement meeting, the team asks: An operational definition should specify

- A. which solution the team prefers
- B. only the target improvement amount
- C. the names of all stakeholders
- D. exactly what is measured and how it is classified

51. At a hospital registration process, the improvement team considers this question: Which element belongs in a data collection plan?

- A. Data source, method, frequency, and responsibility
- B. A final validated root cause
- C. The approved future-state layout

D. The project closeout date only

52. For an e-commerce returns process, select the best response to this question: Which is qualitative data?

- A. The number of minutes in a queue
- B. Customer comments about checkout difficulty
- C. The diameter of a component
- D. The temperature of a furnace

53. During a food-packaging improvement project, determine the correct answer: Which is quantitative data?

- A. A technician's written observation
- B. A customer's description of a delay
- C. A color-coded defect category
- D. Number of orders processed per hour

54. At a call-center improvement huddle, the team needs to answer: A survey is most useful when a team needs

- A. continuous machine temperature readings
- B. a detailed map of process steps
- C. structured feedback from many respondents
- D. a list of task dependencies

55. For a banking-service process, identify the best Lean Six Sigma response: An interview is often preferred over a survey when the team needs

- A. automatic numerical readings
- B. detailed probing and clarification

- C. a ranked defect-frequency chart
- D. a calculation of process yield

56. During an aircraft-maintenance support project, consider the following question: Accuracy of a measurement system means

- A. closeness of measurements to the true value
- B. closeness of repeated readings to each other
- C. consistency over long periods only
- D. ability to detect every defect

57. In a public-service workflow review, choose the best answer: Precision of a measurement system means

- A. closeness of a result to the target value
- B. freedom from all sampling error
- C. closeness of repeated measurements to each other
- D. the highest available resolution

58. For a distribution-center process, the Yellow Belt must determine: Measurement bias is

- A. random spread among repeated readings
- B. change in performance over time
- C. variation between different operators
- D. systematic difference between observed and reference values

59. During a software-release retrospective, identify the most accurate response: Measurement system stability refers to

- A. agreement among several appraisers
- B. consistency of performance over time

- C. ability to distinguish adjacent parts
- D. closeness to a reference standard

60. At a university enrollment improvement meeting, the team asks: Repeatability in a GR&R study is variation from

- A. one appraiser measuring the same part repeatedly
- B. different appraisers measuring the same part
- C. different lots produced over time
- D. customer requirements changing

61. At a hospital registration process, the improvement team considers this question: Reproducibility in a GR&R study is variation from

- A. different appraisers measuring the same item
- B. one appraiser repeating the measurement
- C. a changing customer specification
- D. a shift in the process mean

62. For an e-commerce returns process, select the best response to this question: Why conduct measurement system analysis before major data analysis?

- A. To eliminate the need for operational definitions
- B. To select the final improvement immediately
- C. To ensure decisions are based on trustworthy data
- D. To avoid involving process operators

63. During a food-packaging improvement project, determine the correct answer: The first S in 5S is

- A. Standardize
- B. Sort

- C. Sustain
- D. Shine

64. At a call-center improvement huddle, the team needs to answer: Value stream analysis examines

- A. only individual employee performance
- B. the accounting treatment of inventory
- C. the final inspection results only
- D. material and information flow across an end-to-end process

65. For a banking-service process, identify the best Lean Six Sigma response: In an FMEA, severity rates

- A. the frequency of a failure cause
- B. the chance a control detects a failure
- C. the cost of a project charter
- D. the seriousness of an effect if a failure occurs

66. During an aircraft-maintenance support project, consider the following question: In an FMEA, occurrence rates

- A. how often a failure cause is expected to happen
- B. how serious the customer impact is
- C. how well a control detects the issue
- D. how quickly a team acts

67. In a public-service workflow review, choose the best answer: In an FMEA, detection rates

- A. the cost of a corrective action
- B. the frequency of customer complaints
- C. likelihood that existing controls will find the failure

D. the duration of a process step

68. For a distribution-center process, the Yellow Belt must determine: The traditional risk priority number is based on

- A. cost, cycle time, and yield
- B. severity, occurrence, and detection ratings
- C. mean, median, and mode
- D. scope, schedule, and budget

69. During a software-release retrospective, identify the most accurate response: The 5 Whys technique is used to

- A. choose the five most frequent defects
- B. drill from a problem symptom toward underlying causes
- C. create five project milestones
- D. measure five customer requirements

70. At a university enrollment improvement meeting, the team asks: Which statement best distinguishes a root cause from a symptom?

- A. A symptom always occurs before a root cause
- B. A root cause is only a customer complaint
- C. A symptom is the final corrective action
- D. A root cause drives the problem; a symptom is an observed effect

71. At a hospital registration process, the improvement team considers this question: The 8D method is primarily a structured approach for

- A. setting control limits
- B. calculating sample means

- C. problem solving and corrective action
- D. defining project scope

72. For an e-commerce returns process, select the best response to this question: Force-field analysis examines

- A. forces supporting and resisting a proposed change
- B. only the technical causes of defects
- C. the variation within a measurement system
- D. the order of project activities

73. During a food-packaging improvement project, determine the correct answer: An interim containment action is intended to

- A. permanently eliminate every failure mode
- B. replace the need for data collection
- C. document the final control plan
- D. protect the customer while the root cause is investigated

74. At a call-center improvement huddle, the team needs to answer: A permanent corrective action should

- A. eliminate or control the verified root cause
- B. focus only on making inspection faster
- C. be selected before causes are studied
- D. apply only after project closure

75. For a banking-service process, identify the best Lean Six Sigma response: Preventive action differs from corrective action because it

- A. is used only after a customer complaint

- B. addresses potential problems before they occur
- C. requires no analysis of process risk
- D. never changes a procedure

76. During an aircraft-maintenance support project, consider the following question: A normal distribution is commonly described as

- A. limited to two possible outcomes
- B. always skewed to the right
- C. symmetric and bell-shaped around its mean
- D. made only of categorical data

77. In a public-service workflow review, choose the best answer: A binomial distribution applies when each trial has

- A. a continuous measurement scale
- B. two possible outcomes with a constant probability
- C. an unknown number of categories
- D. a required normal shape

78. For a distribution-center process, the Yellow Belt must determine: A right-skewed distribution has

- A. equal tails on both sides of the mean
- B. two equally common peaks
- C. a longer tail extending toward higher values
- D. only values below the median

79. During a software-release retrospective, identify the most accurate response: A bimodal distribution has

- A. two distinct peaks or clusters

- B. no variability in its observations
- C. a perfectly symmetric shape
- D. only two observations total

80. At a university enrollment improvement meeting, the team asks: Common-cause variation is

- A. variation caused by a specific unusual event
- B. an error created by one operator only
- C. variation that should always be ignored
- D. natural variation inherent in a stable process

81. At a hospital registration process, the improvement team considers this question: Special-cause variation is

- A. the normal noise of a stable process
- B. the same as a customer specification
- C. the result of averaging observations
- D. variation from an identifiable unusual source

82. For an e-commerce returns process, select the best response to this question: Correlation alone demonstrates

- A. that one variable definitely causes another variable
- B. that the data are normally distributed around a mean
- C. an association, not necessarily causation
- D. that a process is stable over time

83. During a food-packaging improvement project, determine the correct answer: Regression analysis is used primarily to

- A. model or predict an outcome from one or more inputs

- B. rank defect categories by their observed frequency
- C. measure agreement among appraisers using repeated measurements
- D. create a detailed project charter for approval

84. At a call-center improvement huddle, the team needs to answer: Kaizen is best described as

- A. a one-time audit of completed work
- B. continuous, incremental improvement involving people
- C. a statistical test for a process mean
- D. a method for setting control limits

85. For a banking-service process, identify the best Lean Six Sigma response: A kaizen blitz is typically

- A. a focused, short-duration improvement event
- B. a long-term study without implementation
- C. a final project tollgate review
- D. a method for calculating DPMO

86. During an aircraft-maintenance support project, consider the following question: In PDCA, the Plan step includes

- A. implementing the change everywhere
- B. standardizing a proven improvement
- C. discarding all collected data
- D. defining the change and how results will be evaluated

87. In a public-service workflow review, choose the best answer: In PDCA, the Do step is

- A. selecting the original project charter
- B. setting the permanent control limits
- C. testing the planned change on an appropriate scale

D. closing the project without review

88. For a distribution-center process, the Yellow Belt must determine: In PDCA, the Check step requires the team to

- A. announce the change to all stakeholders
- B. compare results with expectations using data
- C. write a new project charter
- D. eliminate every remaining variation source

89. During a software-release retrospective, identify the most accurate response: In PDCA, the Act step is used to

- A. adopt, adapt, or abandon the change based on learning
- B. collect baseline data before a project
- C. identify the project sponsor
- D. calculate a measurement bias

90. At a university enrollment improvement meeting, the team asks: A cost-benefit analysis compares

- A. the number of defects with the number of units
- B. customer needs with supplier capabilities
- C. mean values with median values
- D. expected benefits with the resources and costs required

91. At a hospital registration process, the improvement team considers this question: The primary purpose of a control plan is to

- A. identify the first project sponsor
- B. sustain improved process performance after implementation
- C. replace all employee training

D. calculate the initial process baseline

92. For an e-commerce returns process, select the best response to this question: A control plan should include a reaction plan because it

- A. replaces the need for standard work
- B. defines the original project scope
- C. specifies what to do when a measure signals a problem
- D. sets the customer survey questions

93. During a food-packaging improvement project, determine the correct answer: An X-bar and R chart is used to

- A. rank defect categories by total cost
- B. compare two qualitative variables
- C. monitor process average and within-subgroup variation
- D. schedule work tasks on a calendar

94. At a call-center improvement huddle, the team needs to answer: Control limits are based on

- A. process behavior and are not customer specifications
- B. only the customer's preferred target
- C. the project budget and schedule
- D. the maximum acceptable defect count

95. For a banking-service process, identify the best Lean Six Sigma response: A point outside a control limit most strongly suggests

- A. proof that the process meets specifications
- B. a possible special cause requiring investigation
- C. that all data should be discarded

D. a need to recalculate the charter

96. During an aircraft-maintenance support project, consider the following question: Document control helps ensure that

- A. all documents are kept indefinitely
- B. project teams avoid stakeholder communication
- C. data collection is unnecessary
- D. people use the current approved version of process information

97. In a public-service workflow review, choose the best answer: A standard operating procedure is intended to

- A. replace training for new employees
- B. record only financial project results
- C. serve as a list of customer complaints
- D. describe the approved method for consistently performing a process

98. For a distribution-center process, the Yellow Belt must determine: Which action best supports sustaining an improvement?

- A. Stop measuring the process after implementation
- B. Remove the process owner from reviews
- C. Train affected people and audit adherence to the new standard
- D. Discard the updated work instructions

99. During a software-release retrospective, identify the most accurate response: After a successful pilot, the team should first ensure that

- A. the change is documented, communicated, and owned
- B. all baseline data are deleted

- C. the project goal is broadened without review
- D. every process step is redesigned

100. At a university enrollment improvement meeting, the team asks: The process owner should review control-plan results to

- A. replace every team member on the project
- B. take timely action when performance drifts
- C. recalculate the original survey sample
- D. avoid updating work instructions

Exam 9: Answer Key and Explanations

1. A — The best answer is Reduce process variation and defects. It focuses on understanding and reducing variation so process results meet customer requirements more consistently. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and documented evidence, rather

2. B — The best answer is Define, Measure, Analyze, Improve, Control. DMAIC structures improvement work from problem definition through sustaining the improved process. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and documented evidence, rather than relying on

3. D — The best answer is A product feature or activity that meets customer needs. Lean distinguishes customer-valued work from work that consumes resources without meeting a customer need. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and

4. C — The best answer is A connector that can be inserted only in the correct orientation. Poka-yoke is mistake proofing that prevents an error or makes it immediately obvious. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition

5. C — The best answer is Authorize replenishment based on actual consumption. Kanban is a pull-system signal that limits work and triggers replenishment when downstream demand uses material. The

other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and documented

6. B — The best answer is Process owner. The process owner is accountable for day-to-day performance and for maintaining the gains after handoff. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and documented evidence, rather than relying on

7. A — The best answer is Supports improvement work with basic tools and local knowledge. Yellow Belts commonly participate on teams, collect data, and apply foundational tools under project leadership. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition

8. D — The best answer is Removing barriers and aligning the project with business priorities. Champions sponsor projects, provide organizational support, and help remove barriers beyond the team's authority. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and

9. D — The best answer is A team with members from different functions involved in a process. Cross-functional membership brings upstream, downstream, and support perspectives to an end-to-end process. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and

10. A — The best answer is Norming. Norming is when a team develops shared expectations, roles, and ways of working after early uncertainty and conflict. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and documented evidence, rather than

11. C — The best answer is Nominal group technique. Nominal group technique combines silent idea generation, structured sharing, clarification, and voting to reduce domination by louder members. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and documented evidence,

12. B — The best answer is Clarify objectives, sequence, and expected preparation. An agenda helps participants prepare, keeps discussion focused, and makes efficient use of the meeting time. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and documented

13. C — The best answer is Pareto chart. A Pareto chart orders categories by frequency or impact so the team can focus on the vital few contributors. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and documented evidence,

14. B — The best answer is Organize possible causes of a problem. A cause-and-effect diagram groups potential causes into categories so a team can explore why an effect occurs. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and

15. A — The best answer is Flowchart. A flowchart maps steps, handoffs, and decisions, helping teams see complexity, rework, and unclear responsibilities. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and documented evidence, rather than relying on assumptions

16. D — The best answer is Data values plotted in time order. Run charts reveal patterns, shifts, trends, and unusual observations by preserving the time sequence of data. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and documented

17. C — The best answer is Check sheet. A check sheet is a structured form for consistent, real-time collection of categorized data. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and documented evidence, rather than relying on assumptions

18. A — The best answer is Whether two variables appear related. Scatter diagrams plot paired observations and can reveal direction, strength, or absence of a relationship. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and documented evidence, rather

19. D — The best answer is The distribution of numerical data. Histograms group numerical observations into intervals, making center, spread, shape, and possible outliers easier to see. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and documented evidence,

20. B — The best answer is Defects found per unit inspected. DPU divides total defects by total units and can exceed one when a unit contains multiple defects. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and documented

21. B — The best answer is Opportunities for defects per unit. DPMO normalizes defect counts by the number of possible opportunities, allowing comparison among processes of different complexity. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and documented

22. D — The best answer is The probability that a unit passes all steps without rework. RTY multiplies yields across sequential steps, showing the compounded effect of defects in a multistep process. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear

23. A — The best answer is Complete one unit or one process cycle. Cycle time measures how long it takes for a unit to move through the defined process from start to finish. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a

24. C — The best answer is Scrap, rework, and warranty expense. COPQ captures costs caused by failures and inefficiency, such as rework, scrap, returns, and warranty claims. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and documented evidence,

25. A — The best answer is A chronic process problem with measurable performance. DMAIC improves an existing process whose performance gap can be defined, measured, analyzed, improved, and controlled. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and

26. B — The best answer is customer needs, expectations, and perceptions. VOC gathers customer requirements and perceptions so the project targets outcomes that matter to those receiving the process output. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition

27. C — The best answer is a measurable requirement important to the customer. CTQs translate customer needs into measurable performance requirements that teams can define, measure, and improve. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and documented

28. D — The best answer is Clear business value and a manageable scope. A strong project has meaningful value, a defined problem, available data, and a scope the team can realistically influence. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear

29. C — The best answer is people affected by the project and their influence. Stakeholder analysis maps affected groups, their interests, influence, and communication needs so adoption risks are addressed early. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational

30. D — The best answer is inputs required by the process. SIPOC summarizes Suppliers, Inputs, Process, Outputs, and Customers at a high level before detailed mapping begins. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and documented evidence,

31. B — The best answer is Customer. The customer is the person or organization that receives, uses, or is affected by the output. The other choices describe a different tool, role, measure, or action and

therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and documented evidence, rather than relying on

32. A — The best answer is A factual description of the current performance gap. A problem statement describes what is happening, where, when, and how large the gap is without assuming a cause or solution. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept

33. C — The best answer is Scope boundaries. A charter aligns the team on problem, goal, business case, scope, roles, milestones, and initial assumptions. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and documented evidence, rather than relying

34. D — The best answer is specific, measurable, and time-bounded. Goals state the desired measurable improvement and timeframe, enabling the team to judge whether results meet expectations. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and documented evidence,

35. A — The best answer is what is included and excluded from the effort. Clear scope boundaries prevent uncontrolled expansion and help stakeholders understand what the team will and will not address. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear

36. B — The best answer is describe current performance before changes. Baseline measures establish the starting condition, allowing the team to quantify the gap and evaluate improvement objectively. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and documented

37. B — The best answer is Audience, message, method, timing, and owner. Communication plans make project information timely and purposeful by identifying who needs what information, when, and how it will be delivered. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a

38. A — The best answer is decompose project work into manageable deliverables. A WBS breaks project scope into smaller work packages, which improves planning, assignment, tracking, and accountability. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and documented

39. C — The best answer is displaying tasks against a calendar timeline. Gantt charts visualize task timing, duration, overlap, and progress, helping teams manage deadlines and dependencies. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and documented evidence,

40. D — The best answer is showing task dependencies and possible critical paths. Network diagrams show predecessor relationships, helping project teams see sequence constraints and the paths that govern completion time. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational

41. A — The best answer is group many ideas into natural themes. Affinity diagrams organize a large set of verbal ideas into related groups, making patterns and major themes easier to interpret. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear

42. C — The best answer is relationships between sets of factors. Matrix charts display relationships among two or more groups, such as customer needs, process steps, and responsible functions. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and

43. D — The best answer is verify readiness before moving to the next DMAIC phase. Tollgates provide a structured review of deliverables, evidence, and risks before leadership authorizes the next phase. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational

44. B — The best answer is summing observations and dividing by their count. The mean uses every observed value and represents the average level of a numerical data set. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and

45. B — The best answer is middle value after data are ordered. The median is the central observation in ordered data, or the average of the two central observations for an even count. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a

46. C — The best answer is most frequently occurring value or category. Mode identifies the most common value or category and is especially useful for categorical or repeated data. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and

47. D — The best answer is maximum value minus minimum value. Range is a simple measure of spread that compares the highest and lowest observed values. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and documented evidence, rather

48. A — The best answer is typical spread of observations around the mean. Standard deviation quantifies how widely values tend to vary around their average; larger values indicate greater spread. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition

49. C — The best answer is the squared measure of spread around the mean. Variance is based on squared deviations from the mean and is the quantity from which standard deviation is derived. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a

50. D — The best answer is exactly what is measured and how it is classified. Operational definitions make data consistent by stating the observable criteria, method, units, and decision rules for classifying results. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a

51. A — The best answer is Data source, method, frequency, and responsibility. A collection plan ensures comparable data by defining what is gathered, from where, by whom, how, and when. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition

52. B — The best answer is Customer comments about checkout difficulty. Qualitative data are descriptive or categorical, such as comments, labels, or classifications rather than numerical measurements. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and documented evidence,

53. D — The best answer is Number of orders processed per hour. Quantitative data are numerical counts or measurements that can be analyzed with arithmetic and statistical methods. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and documented

54. C — The best answer is structured feedback from many respondents. Surveys collect standardized responses from a defined group, making perceptions or preferences easier to compare and summarize. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and documented

55. B — The best answer is detailed probing and clarification. Interviews allow follow-up questions and clarification, producing richer detail than fixed-response survey questions. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and documented evidence, rather than relying on

56. A — The best answer is closeness of measurements to the true value. Accuracy concerns whether a measurement is centered on the true reference value, rather than merely repeated consistently. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition

57. C — The best answer is closeness of repeated measurements to each other. Precision is repeatability of results: a precise system gives similar readings when the same item is measured repeatedly. The other

choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational

58. D — The best answer is systematic difference between observed and reference values. Bias is a consistent offset from a known reference, causing measurements to be systematically high or low. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition

59. B — The best answer is consistency of performance over time. Stability asks whether the measurement process stays predictable over time when measuring the same stable reference. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and documented evidence,

60. A — The best answer is one appraiser measuring the same part repeatedly. Repeatability is equipment variation observed when the same person measures the same item repeatedly with the same method. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational

61. A — The best answer is different appraisers measuring the same item. Reproducibility reflects appraiser-to-appraiser differences, revealing whether people apply the measurement method consistently. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and documented evidence, rather than relying

62. C — The best answer is To ensure decisions are based on trustworthy data. If the measurement system is unreliable, apparent process variation may be measurement error and lead the team to wrong conclusions. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with

63. B — The best answer is Sort. Sort removes unnecessary items from the workplace so needed items are easier to find and unnecessary clutter does not create waste. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and documented

64. D — The best answer is material and information flow across an end-to-end process. Value stream analysis follows work and information through the whole process to identify value-added and non-value-added activity. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational

65. D — The best answer is the seriousness of an effect if a failure occurs. Severity estimates impact on the customer or process when the failure reaches the effect stage. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition

66. A — The best answer is how often a failure cause is expected to happen. Occurrence estimates likelihood or frequency of the cause, helping prioritize risks together with severity and detection. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational

67. C — The best answer is likelihood that existing controls will find the failure. Detection evaluates the chance that controls will discover the failure before it reaches the customer; poorer detectability receives greater concern. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with

68. B — The best answer is severity, occurrence, and detection ratings. RPN combines severity, occurrence, and detection to help teams rank potential failure modes for further action. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and documented evidence,

69. B — The best answer is drill from a problem symptom toward underlying causes. By repeatedly asking why, teams can move beyond an obvious symptom and explore causal mechanisms that can be addressed. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a

70. D — The best answer is A root cause drives the problem; a symptom is an observed effect. Root causes are underlying conditions that create the observed problem, while symptoms are visible results of those conditions. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this

71. C — The best answer is problem solving and corrective action. 8D organizes team-based problem solving from containment and root-cause analysis through corrective action and prevention of recurrence. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and documented

72. A — The best answer is forces supporting and resisting a proposed change. Force-field analysis helps teams identify drivers and barriers so a change strategy can strengthen support and reduce resistance. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational

73. D — The best answer is protect the customer while the root cause is investigated. Containment limits immediate impact, but it is temporary and should be followed by verified permanent corrective action. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear

74. A — The best answer is eliminate or control the verified root cause. Permanent action addresses the cause that creates the problem and is validated for effectiveness after implementation. The other choices

describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and

75. B — The best answer is addresses potential problems before they occur. Preventive action uses risk and process analysis to avoid future failures, whereas corrective action responds to an existing nonconformity. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational

76. C — The best answer is symmetric and bell-shaped around its mean. A normal distribution is continuous and symmetric, with observations clustering near the mean and fewer values farther away. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition

77. B — The best answer is two possible outcomes with a constant probability. Binomial models count successes across independent trials when each trial has two outcomes and the success probability remains constant. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear

78. C — The best answer is a longer tail extending toward higher values. Right skew means a small number of high observations stretch the distribution's tail to the right. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and

79. A — The best answer is two distinct peaks or clusters. Two peaks can indicate that different populations, conditions, or process streams have been combined in one data set. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and

80. D — The best answer is natural variation inherent in a stable process. Common causes are the routine sources of fluctuation built into a stable system and require system-level improvement to reduce. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear

81. D — The best answer is variation from an identifiable unusual source. Special causes arise from specific, nonroutine conditions and should be investigated to remove harmful causes or learn from beneficial ones. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear

82. C — The best answer is an association, not necessarily causation. Correlation describes how variables move together. It does not establish that changing one variable will cause a change in the other. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear

83. A — The best answer is model or predict an outcome from one or more inputs. Regression estimates a relationship between input variables and an outcome so teams can describe or predict expected

performance. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with

84. B — The best answer is continuous, incremental improvement involving people. Kaizen emphasizes ongoing small improvements by people close to the work, building learning and problem solving into daily operations. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition

85. A — The best answer is a focused, short-duration improvement event. A kaizen blitz concentrates a cross-functional team on rapid analysis and implementation within a defined, short time period. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and

86. D — The best answer is defining the change and how results will be evaluated. Plan establishes the objective, proposed change, measures, and test approach before action is taken. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and

87. C — The best answer is testing the planned change on an appropriate scale. Do carries out the planned test, often on a limited scale, while documenting what actually happened. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition

88. B — The best answer is compare results with expectations using data. Check studies the results of the test and compares actual performance with the prediction established in the Plan step. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational

89. A — The best answer is adopt, adapt, or abandon the change based on learning. Act applies lessons from the test by standardizing a successful change, adjusting it, or beginning another cycle. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear

90. D — The best answer is expected benefits with the resources and costs required. Cost-benefit analysis supports decisions by considering whether expected financial or operational gains justify implementation and ongoing costs. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational

91. B — The best answer is sustain improved process performance after implementation. A control plan documents what to monitor, how to measure it, who responds, and what action to take if performance changes. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a

92. C — The best answer is specifies what to do when a measure signals a problem. Reaction plans make control actionable by assigning timely steps when monitored performance deviates from the expected condition. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a

93. C — The best answer is monitor process average and within-subgroup variation. X-bar charts track subgroup averages, while R charts track within-subgroup ranges; together they monitor stability in variable data. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition

94. A — The best answer is process behavior and are not customer specifications. Control limits are statistically derived from process data to distinguish expected common-cause variation from unusual signals. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and

95. B — The best answer is a possible special cause requiring investigation. An out-of-control point is an unusual signal relative to the process's expected behavior and should trigger investigation. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition and

96. D — The best answer is people use the current approved version of process information. Document control manages approval, revision, distribution, and access so obsolete instructions do not create inconsistent work. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational

97. D — The best answer is describe the approved method for consistently performing a process. SOPs provide controlled, repeatable instructions for a process, supporting consistency, training, compliance, and sustained improvement. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition

98. C — The best answer is Train affected people and audit adherence to the new standard. Sustained improvement requires standard work, training, monitoring, ownership, and follow-up so the process does not revert. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear

99. A — The best answer is the change is documented, communicated, and owned. Documenting, communicating, and assigning ownership makes a proven change repeatable and prepares the organization to maintain it. The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational definition

100. B — The best answer is take timely action when performance drifts. Regular review lets the owner detect emerging issues, execute reaction plans, and preserve the gains achieved by the improvement.

The other choices describe a different tool, role, measure, or action and therefore do not answer the question asked. In practice, the team should use this concept with a clear operational