



The Global Voice of Quality™

SAMPLE EXAMINATION

The purpose of the following sample examination is to provide an example of what is provided on exam day by ASQ, complete with the same instructions that are provided on exam day.

The test questions that appear in this sample examination are retired from the CQPA pool and have appeared in past CQPA examinations. Since they are now available to the public, they will NOT appear in future CQPA examinations. This sample examination WILL NOT be allowed into the exam room.

Appendix A contains the answers to the sample test questions. ASQ will not provide scoring and analysis for this sample examination. Remember: These test questions will not appear on future examinations so your performance on this sample examination may not reflect how you perform on the formal examination. A self-appraisal of how well you know the content for the specific areas of the body of knowledge (BOK) can be completed by using the worksheet in Appendix B.

On page 2 of the instructions, it states “There are 100 questions on this 4-hour examination.” Please note that this sample exam only contains 50 questions.

If you have any questions regarding this sample examination, please email cert@asq.org

© 2011 ASQ

ASQ grants permission for individuals to use this sample examination as a means to prepare for the formal examination. This examination may be printed, reproduced and used for non-commercial, personal or educational purposes only, provided that (i) the examination is not modified, and (ii) ASQ’s copyright notice is included. The user assumes all risks of copyright infringement.

THIS PAGE WAS LEFT BLANK INTENTIONALLY



NAME _____

CERTIFIED QUALITY PROCESS ANALYST

Please print your name above. Read all the instructions before beginning the examination. If you are unsure about any part of the instructions, consult your proctor.

General Instructions

All answers **must** be recorded on the Scantron Answer Sheet; no exam will be graded with the answers marked in the exam booklet.

1. Using a soft lead pencil (#2 or softer) only, blacken the circle of the correct answer. **Do not use ink.** If you change your answer, be sure to erase the previous answer completely.
2. Each question has **ONE** correct answer only.
3. This is a timed test; do not linger over difficult questions. Instead, skip the questions of which you are unsure; return to them when you reach the end of the test.
4. Do not fold, staple, or tear the answer sheets.
5. Although this is an open book examination and personally generated materials/notes from training or refresher courses **are** allowed, the following conditions apply:
 - Each examinee must make his/her reference materials available to the proctor for review.
 - Absolutely no collections of questions and answers or weekly refresher course quizzes are permitted. Reference sources that contain such copy are not allowed unless the questions and answers are removed or obscured. **Examples of such sources include but are not limited to refresher and preparatory primers.**
 - **Calculator Policy:** With the introduction of palmtop computers and increasing sophistication of scientific calculators, ASQ has become increasingly aware of the need to limit the types of calculators that are permitted for use during the examinations. **Any silent, hand-held, battery-operated calculator WITHOUT an alphabetic keyboard will be permitted; however, all programmable memory must be cleared from the calculator before you enter the exam room.** The examination is written so that a simple calculator will be sufficient to perform calculations.
 - No laptop or palmtop computers are allowed.
 - No Cell Phones are allowed in exam room
 - Reference materials and calculators may not be shared.
6. When you have finished, check your answer sheet to be sure it is properly identified with your name and member number. Return your examination booklet, answer sheet, examinee comment form and scratch paper to your proctor. You must sign the roster sheet to signify the return of your test booklet.
7. It is strictly forbidden to copy or remove examination materials. You will be disqualified from the examination and not certified by ASQ if you breach this trust.
8. **PLEASE BE PATIENT** - you will receive your results in approximately two weeks. Sorry, but we do not answer telephone requests for results. If you pass, your certificate will be sent directly to your address of record. If you do not pass, you will receive a Pareto analysis of your test results along with retake information.

CERTIFIED QUALITY PROCESS ANALYST Test

Directions: Each of the questions or incomplete statements below is followed by four suggested answers or completions. Select the one that is best in each case and then fill in the corresponding space on the answer sheet.

1. An organization that receives goods or services from another part of the same organization is considered an
 - (A) external supplier
 - (B) external customer
 - (C) internal supplier
 - (D) internal customer

2. Which of the following phases in the audit process includes the development of an audit schedule?
 - (A) Initiation
 - (B) Preparation
 - (C) Closing
 - (D) Reporting

3. If a company begins to receive a large number of returns from various customers, what is the first step that should be taken to investigate the problem?
 - (A) Review the inspection records
 - (B) Analyze the correlation of the returns to shipments
 - (C) Brainstorm the potential causes
 - (D) Classify the returns by type and degree of seriousness

4. The number of defects in a square foot of material is being monitored on a c chart and the mean number of defects is calculated at 13.5 after the initial startup period. What should the control limits be for the c chart?

	<u>LCL</u>	<u>UCL</u>
(A)	0.00	27.00
(B)	0.00	54.00
(C)	2.48	24.52
(D)	9.83	17.17

5. In self-directed teams, which of the following roles is the responsibility of the group leader?
 - (A) Coach
 - (B) Director
 - (C) Decision-maker
 - (D) Gatekeeper

6. For a customer survey, which of the following sampling techniques should be used if the samples are based on the categories of frequency of product use, categories of use, and demographics?
 - (A) Random
 - (B) Convenience
 - (C) Stratification
 - (D) Cluster

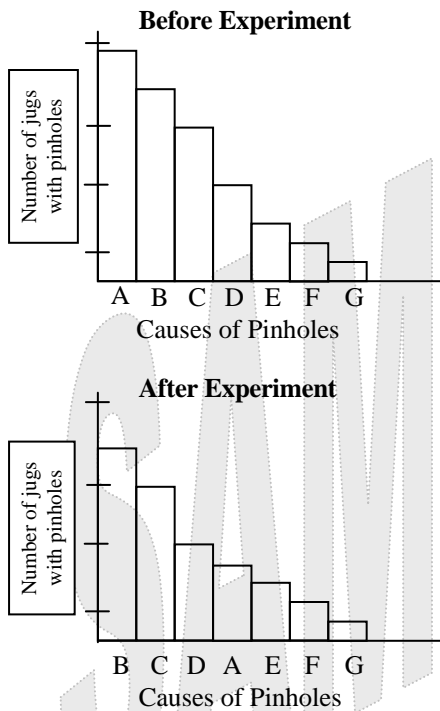
7. Which of the following techniques is Deming's method for continuous improvement?
 - (A) Cost of quality analysis
 - (B) Loss function
 - (C) Tree diagram
 - (D) PDCA cycle

8. What is the recommended minimum number of subgroups necessary to calculate the limits for a control chart?
 - (A) 25
 - (B) 35
 - (C) 50
 - (D) 100

9. A tree diagram is best described as showing the

- (A) input of a process flow
- (B) hierarchy of event relationships
- (C) natural grouping of facts and ideas
- (D) vital few versus the trivial many

10. A quality improvement team that was assigned to decrease the number of pinholes in milk jugs presented the following Pareto diagrams during a management briefing.



The best interpretation of these data is that the project was

- (A) not successful in reducing pinholes, since causes B, C, and D now occur more frequently than cause A
- (B) successful in removing the primary cause of pinholes, and no further improvements are necessary
- (C) successful, and tracking pinholes by cause A is no longer necessary
- (D) successful in decreasing pinholes, and the team should work on cause B to further improve the process

11. A quality improvement team should have a facilitator who has previous experience in

- (A) the process being investigated by the team
- (B) consulting from outside the company
- (C) implementing process improvement tools
- (D) an authority role helping teams to resolve impasses

12. Which of the following actions is often the weakest feature in a corrective action plan?

- (A) Identifying the root causes of the problem
- (B) Identifying and evaluating the consequence of the problem
- (C) Establishing target dates for implementation of corrective action
- (D) Identifying actions that will be taken to eliminate the root causes of the problem

13. The purpose of conducting process audits is to

- (A) identify employees who are not performing according to standards
- (B) ensure standardized quality practices are being used
- (C) develop corrective action response plans
- (D) find nonconformances

14. Which of the following conditions must be met for a process to be in a state of statistical control?

- (A) Most of the product output by the process is in specification.
- (B) All subgroup averages and ranges are within control limits.
- (C) All variation has been completely removed.
- (D) Previously optimal process settings are used.

15. Training is an appropriate step to take when employees lack

- (A) adequate tools
- (B) high quality raw materials
- (C) effective processes
- (D) necessary skills

16. What percentage of data falls within $\pm 3\sigma$ of the mean in a normal distribution?

- (A) 95.46%
- (B) 99.73%
- (C) 99.96%
- (D) 100.00%

17. In a third-party audit, the lead auditor is responsible for distributing the audit report to the

- (A) audit team
- (B) auditee
- (C) client
- (D) department managers

18.

	1	2	3	4	5	6	7
SAMPLES	3	2	1	-1	3	2	3
	1	3	3	-1	2	1	2
	-1	0	2	2	-1	1	1
	2	-2	1	1	2	-1	3
	-1	4	1	0	2	0	3

On the basis of the control chart sample above, what is the upper control limit (UCL) for the average?

- (A) 1.23
- (B) 3.21
- (C) 3.43
- (D) 7.25

19. Confidence limits are generated in order to define the

- (A) limits of random variation around a control value
- (B) limits that contain all future observations
- (C) interval within which a population parameter lies
- (D) amount of variation that the process exhibits

20. After a team generates a list of ideas in a brainstorming session, the team should use which of the following tools to organize the list?

- (A) Activity network diagram
- (B) Affinity diagram
- (C) Histogram
- (D) Process control chart

21. Once a company decides to include benchmarking as one of the tools it uses to improve its products, the next step should be to

- (A) contact a consultant to find best-in-class benchmark partners
- (B) gather data to identify areas for improvement within the company
- (C) prepare a standardized benchmark agreement
- (D) assign a quality professional to the benchmarking team

22. A set of cards consists of five red cards and eight blue cards, each having a unique design. Using this set, how many unique combinations can be made that consists of one of the red cards and two of the blue cards?

- (A) 40
- (B) 80
- (C) 140
- (D) 280

23. Which of the following assumptions is made for a two-sample t-test?

- (A) The populations have the same mean
- (B) The populations are normally distributed
- (C) The samples are the same size
- (D) The samples are not randomly selected

24. A method that classifies data without significantly reducing accuracy or precision is known as
- (A) bias adjustment
 - (B) statistical efficiency
 - (C) blocking
 - (D) coding
25. Which of the following tools is used for data collection?
- (A) Check sheet
 - (B) Flowchart
 - (C) Histogram
 - (D) Pareto chart
26. An action taken to eliminate the cause of a nonconformity is the definition of
- (A) preventive action
 - (B) poka-yoke
 - (C) complaint resolution
 - (D) corrective action
27. The quality costs associated with the investigation of end-user complaints are classified as
- (A) prevention costs
 - (B) appraisal costs
 - (C) internal failure costs
 - (D) external failure costs
28. Which of the following terms is used to describe the extent to which an instrument replicates its result when measurements are taken repeatedly on the same unit?
- (A) Bias
 - (B) Precision
 - (C) Accuracy
 - (D) True value
29. What is the final step in the quality planning process?
- (A) Obtain approval from upper management
 - (B) Develop a quality cost reporting system
 - (C) Validate the plan through an ISO auditor
 - (D) Transfer the plan to operations
30. Which of the following statements is true about the bathtub curve?
- (A) The early phase represents wearout failures.
 - (B) The early phase shows increasing failure rate.
 - (C) The middle phase shows a decreasing failure rate.
 - (D) The middle phase represents random failures.
31. According to the ASQ Code of Ethics, quality professionals who are members of ASQ are required to
- (A) disclose information about competitors to their current employer
 - (B) perform services in a wide variety of quality-related areas
 - (C) enhance their professional development by becoming certified in a quality discipline
 - (D) use their knowledge, skills, and experience to benefit human welfare
32. Which of the following metrics should be used to estimate the life of a product?
- (A) Mean time to failure (MTTF)
 - (B) Mean time to repair (MTTR)
 - (C) Failure modes
 - (D) Failure criticality
33. The purpose of an \bar{X} and R chart is to
- (A) indicate process variation
 - (B) indicate design limits
 - (C) identify cost of quality categories
 - (D) identify customer expectations

34. According to Juran, when a major quality improvement project is launched, which of the following describes the desired change in performance level?
- (A) Six sigma
 - (B) Continuous
 - (C) Breakthrough
 - (D) Sporadic

35. When a control chart is used on a new process, capability can be assessed at which of the following times?
- (A) Before the chart is first started
 - (B) After the first ten points are plotted
 - (C) When the plotted points hug the centerline
 - (D) After the process is shown to be in control

36. What is the standard deviation of the population below?
- 10, 4, 16, 12, 8
- (A) 4.00
 - (B) 4.47
 - (C) 16.00
 - (D) 20.00

37. Which of the following types of diagrams is used for quality function deployment (QFD)?
- (A) Affinity
 - (B) Matrix
 - (C) Cause and effect
 - (D) Activity network

38. The best way for a timekeeper to help a team is to
- (A) keep minutes of the meeting and record how much time was spent on each agenda item
 - (B) keep track of time during the meeting and alert the team when allocated time is almost up
 - (C) end the team discussions in order to adhere to the agenda
 - (D) let team members know when too much time has been spent on a topic and has prevented the team from completing its work

39. Which of the following elements is part of a supplier rating system?

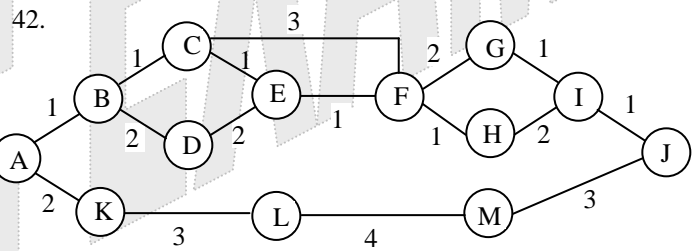
- (A) Delivery performance
- (B) Product sales
- (C) Supplier's inspection criteria
- (D) Supplier location

40. One of the auditee's responsibilities during an audit opening meeting is to

- (A) prepare the meeting agenda
- (B) set the audit schedule
- (C) state the audit purpose and scope
- (D) identify safety requirements

41. Which of the following tools is used to identify tasks, track milestones, and show the progress of a project?

- (A) Gantt chart
- (B) PERT chart
- (C) Interrelationship digraph
- (D) Flowchart



What is the critical path in the activity network diagram above?

- (A) A, B, C, F, G, I, J
- (B) A, B, D, E, F, G, I, J
- (C) A, B, D, E, F, H, I, J
- (D) A, K, L, M, J

43. A newly formed team should complete which of the following activities in order to determine the scope of their project?

- (A) Team training
- (B) Charter development
- (C) Consensus building
- (D) Role-playing

44. Kaizen is defined as

- (A) predictive maintenance
- (B) special cause variation
- (C) continuous improvement
- (D) continuous flow manufacturing

45. Which of the following types of charts is based directly on specification limits?

- (A) Cusum
- (B) PRE-control
- (C) \bar{X} and mR
- (D) \bar{X} and R

46. Correlation analysis is a technique used to measure the degree of

- (A) statistical relationship between two random variables
- (B) causal relationship between two random variables
- (C) goodness of fit to a normal distribution
- (D) goodness of fit to an exponential distribution

47. Which of the following tools should be used for planning cycle-time reduction and concurrent operations?

- (A) Timeline
- (B) Affinity diagram
- (C) Prioritization matrix
- (D) PERT chart

48. Attribute and variable data are best described as which of the following?

<u>Attribute</u>	<u>Variable</u>
(A) Counted values	Measured values
(B) Counted values	Visual features
(C) Measured values	Counted values
(D) Visual features	Counted values

49. Which of the following statistics is represented by the parameter μ ?

- (A) Median
- (B) Mid-range
- (C) Mean
- (D) Mode

50. A cross-functional team has been assigned the task of reducing the time between receipt and payment of invoices. Once the team develops a flowchart of the process, which of the following tools should the team use next?

- (A) Fishbone diagram
- (B) Scatter diagram
- (C) Box and whisker plot
- (D) Histogram

END OF EXAM

IF YOU FINISH BEFORE TIME IS CALLED, YOU MAY GO BACK AND CHECK YOUR WORK ON THIS TEST.

APPENDIX A: Answer Sheet

For each sample test question, the correct answer is provided below along with the area of the body of knowledge (BOK) that the item is classified to. This sample examination is not intended to represent all areas of the BOK but to provide a sampling from each major topic area. All ASQ examinations are based on the BOK for that particular exam. To view the BOK for CQPA, please go to <http://www.asq.org/certification/quality-process-analyst/bok.html>

Question	BOK	Correct Answer
1	IV.A.	D
2	I.F.2	B
3	IV.G.	D
4	III.E.4	C
5	I.G.1	A
6	III.B.2	C
7	II.B.	D
8	III.E.5	A
9	II.C.	B
10	II.A.	D
11	I.G.3	C
12	IV.F.	B
13	I.F.1	B
14	III.E.8	B
15	I.H.	D
16	III.A.2	B
17	I.F.3	C
18	III.E.3	B
19	III.E.2	C
20	II.C.	B
21	II.G.	B
22	III.A.3	C
23	III.G.	B
24	III.B.2	D
25	II.A.	A

Question	BOK	Correct Answer
26	IV.F.	D
27	I.C.	D
28	III.D.	B
29	I.B.	D
30	IV.D.	D
31	I.A.	D
32	IV.D.	A
33	III.E.3	A
34	II.B.	C
35	III.E.6	D
36	III.A.1	A
37	IV.B.	B
38	I.G.3	B
39	IV.E.	A
40	I.F.3	D
41	II.D.	A
42	II.D.	D
43	I.G.2	B
44	II.B.	C
45	III.E.7	B
46	III.F.	A
47	II.D.	D
48	III.B.1	A
49	III.A.1	C
50	II.A.	A

APPENDIX B: Analyzing Body of Knowledge (BOK) Content

The following worksheet can be used to help you analyze the results of your answers on this sample examination. It can be used to determine which areas of the body of knowledge (BOK) you may want to study.

After learning which sample test questions you had correct, total the number you had correct and enter that number into the 2nd column of the worksheet. The 3rd column provides the total number of test questions that are in this sample examination for that major area of the BOK. The last column provides the total number of test questions that appear in a formal ASQ examination for that area of the BOK.

BOK Topic Area	Total You Had Correct on Sample Exam	Total in the Sample Exam	Total in Formal ASQ Exam
I. Quality Basics		12	<i>24</i>
II. Problem Solving and Improvement		12	<i>23</i>
III. Data Analysis		18	<i>35</i>
IV. Customer-Supplier Relations		8	<i>18</i>
GRAND TOTAL		50	<i>100</i>