



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 CQI pool and have appeared in past CQI examinations. Since they are now available to the public, they will NOT appear in future CQI 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 mrehm@asq.org

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NAME _____

CERTIFIED QUALITY INSPECTOR

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.

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.

Special Instructions

1. Please note that your answer sheet has been personalized with your name, member number, section number, and test type.
2. Do NOT make any changes to these parts of the answer sheet. Doing so will only delay your exam results. Notify the Proctor of any changes.
3. If you don't have a personalized answer sheet, see your Proctor for further instructions.
4. There are 100 questions on this 4-hour examination. Please check that you have the correct number of questions.

LAST NAME										FIRST NAME										ASQ SECTION		
MARTIN										MARY										1202		
A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	0	0	0		
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Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q					
R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R					
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V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V					
W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W					
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y					
Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z					

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5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9

IMPORTANT
USE NO PENCIL ONLY
EXAMPLE: (A) (B) (C) (D)
ERASE COMPLETELY TO CHANGE

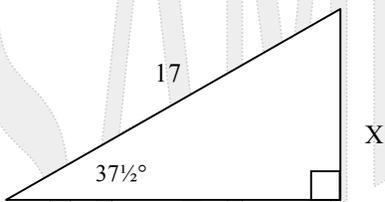
- CMI
- CQT
- CGE
- COA
- CRE
- MANAGER
- CSQE
- HACCP
- CQIA
- BLACK BELT
- BIOMEDICAL
- CCT
- CQPA
- GREEN BELT
- NAVY LBB
- ORIGINAL
- RETAKE
- RECERT

STOP

DO NOT CONTINUE UNTIL INSTRUCTED

CERTIFIED QUALITY INSPECTOR 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. The “check” step of a PDCA cycle requires a project team to
- (A) implement changes
 (B) observe the effects of change
 (C) repeat the test and watch for side effects
 (D) decide what change would improve the process
2. 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
3. The technique used to calibrate a gage block is known as
- (A) interferometry
 (B) ultrasonic
 (C) liquid penetration
 (D) magnetic resonance
- 4.
- 
- What is the length of side X?
- (A) 10.35
 (B) 12.41
 (C) 13.04
 (D) 13.49
5. Which of the following is the most appropriate definition of a datum?
- (A) A center plane or middle of a feature
 (B) A physical characteristic of a feature such as a primary surface
 (C) A theoretically exact point, axis, or plane derived from a feature
 (D) The primary surface from which a feature has coincident axis
6. The print call out for a general purpose internal thread would include
- (A) 2B
 (B) 2A
 (C) 1B
 (D) 1A
7. A telescopic gage is best described in which of the following ways?
- I. It is a calibrated instrument.
 II. It is used for transfer measurement.
 III. It is used for inside measurement.
- (A) I only
 (B) III only
 (C) I and II only
 (D) II and III only
8. Which of the following statements is true about torque wrenches?
- (A) They should be used to recheck fasteners that have already been torqued.
 (B) They should be used for applications only within 80% of their range.
 (C) They do not require calibration.
 (D) They do not require special handling.

9. The direct distance between two adjacent lines on a scale is the definition of
- (A) discrimination
 - (B) direct measurement
 - (C) a calibration interval
 - (D) contact measurement
10. What is the total tolerance of a blueprint dimension that reads $3" \pm .002"$?
- (A) 0.001"
 - (B) 0.002"
 - (C) 0.003"
 - (D) 0.004"
11. If a motor consumes 1,100 watts and has an efficiency of 85 percent, what is the output in horsepower when $1 \text{ hp} = 746 \text{ w}$?
- (A) 1.25
 - (B) 1.28
 - (C) 1.69
 - (D) 1.73
12. On a print, $\varnothing 0.85 \square \theta 1.000 \nabla 0.500$ means which of the following?
- (A) Drill a 0.850 hole and do not exceed 1.000 diameter.
 - (B) Drill a 0.850 hole through and counterbore a 1.000 diameter hole 0.500 deep.
 - (C) Drill a 0.850 roughing hole and finish with a 1.000 diameter hole; both holes may not exceed 0.500 deep.
 - (D) Drill a 0.850 hole to a depth of 1.000; hole to be free of burrs for a depth of 0.500.
13. Which of the following resolutions would be used to verify a dimension of $1.5 \text{ mm} \pm 0.05 \text{ mm}$?
- (A) 0.100 mm
 - (B) 0.050 mm
 - (C) 0.025 mm
 - (D) 0.005 mm
14. Precision is best described as
- (A) a comparison to a known standard
 - (B) the achievement of expected outgoing quality
 - (C) the repeated consistency of results
 - (D) the difference between an average measurement and the actual value
15. What is 68 Fahrenheit converted to Centigrade?
- (A) 16 C
 - (B) 20 C
 - (C) 28 C
 - (D) 36 C
16. Which of the following can measure size and location simultaneously?
- (A) Dial bore indicator
 - (B) Digital calipers
 - (C) Micrometer
 - (D) Coordinate measuring machine
17. Rank order the following standards, from highest to lowest.
1. International standards
 2. Company laboratory standards
 3. Metrology laboratory standards
 4. National standards
- (A) 1, 2, 3, 4
 - (B) 1, 4, 3, 2
 - (C) 3, 4, 2, 1
 - (D) 4, 1, 3, 2
18. Seriousness classifications for quality characteristics and defects are derived from
- (A) equipment and processes
 - (B) specifications and failure evidence
 - (C) inspection error
 - (D) maintenance and machine downtime

19. Reading a dial indicator from an angle produces a common measurement error known as

- (A) parallax
- (B) cosine
- (C) tangent
- (D) bias

20. All of the following situations indicate the need for a product audit EXCEPT when

- (A) nonconforming product is received by a customer
- (B) product is found defective after 100% inspection
- (C) a new product is being released for the first time
- (D) a customer identifies a product inventory discrepancy

21. A first-article tool sample inspection is performed to ensure that all

- (A) purchase order requirements are being satisfied
- (B) items in the bill of materials for the tool are correct
- (C) specified characteristics are being met
- (D) engineering responsibilities are complete

22. A triangle has two sides adjacent to the 90° angle that measure 6 mm and 20 mm. The length of the hypotenuse is

- (A) 4.57 mm
- (B) 20.88 mm
- (C) 26.00 mm
- (D) 436.00 mm

23. Which of the following is the correct way to open and close a micrometer?

- (A) Hold it by the thimble and twirl it.
- (B) Run the thimble across a hard surface.
- (C) Run the thimble across your hand.
- (D) Hold the adjusting nut and turn the ratchet screw.

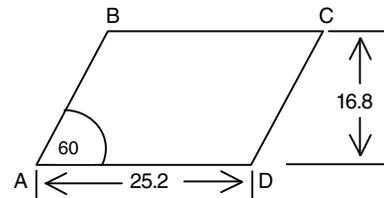
24. Which of the following types of testing should NOT be used with 100% lot inspection?

- (A) Electrical
- (B) Ultrasonic
- (C) Nondestructive
- (D) Destructive

25. The dial caliper evolved from which of the following gages?

- (A) Vernier caliper
- (B) Micrometer
- (C) Dial bore gage
- (D) Digital caliper

26.



What is the area of the parallelogram shown above?

- (A) 122.21
- (B) 211.68
- (C) 366.64
- (D) 423.36

27. The primary purpose of wringing gage blocks is to

- (A) clean them
- (B) place them on the stacking ring
- (C) remove air from between them
- (D) detect cracks in them

28. All of the following statements are true about electronic gages EXCEPT:

- (A) They produce signals transferable by any electrical conductor.
- (B) Very light gaging forces are achievable.
- (C) Parallax errors are likely to occur.
- (D) Voltage variations are proportional to sensed displacements.

29. A standard micrometer will have how many pitch threads per inch?

- (A) 25
- (B) 40
- (C) 60
- (D) 100

30. Which of the following are advantages of automated inspection?

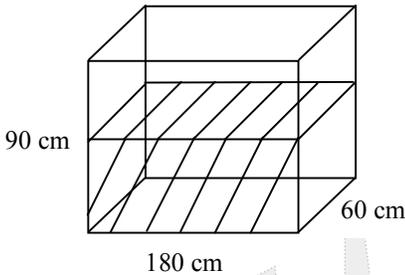
- I. Fatigue reduction
- II. Increased variation of results
- III. Increased inspection points

- (A) I and II only
- (B) I and III only
- (C) II and III only
- (D) I, II, and III

31. Which of the following hardness tests is best suited for plastic and rubber?

- (A) Brinell
- (B) Rockwell B
- (C) Rockwell C
- (D) Durometer

32.



How many US gallons are required to fill a rectangular tank $\frac{2}{3}$ full that is 180 cm long, 60 cm wide, and 90 cm deep?

- (A) 171.18
- (B) 256.77
- (C) 648.00
- (D) 972.00

33. What type of gage is best to use to avoid damaging an object's surface?

- (A) Pneumatic gage
- (B) Ring gage
- (C) Snap gage
- (D) Thread plug gage

34. All of the following are used for angular measurements EXCEPT

- (A) optical polygon
- (B) auto collimator
- (C) rotary table
- (D) optical flat

35. The process of comparing one standard against a higher-order standard of greater accuracy is called

- (A) qualification
- (B) traceability
- (C) precision
- (D) calibration

36. The plan-do-check-act (PDCA) cycle is a process for

- (A) learning and improving
- (B) training and gaining
- (C) inspecting and recording
- (D) measuring and informing

37. A change in calibration intervals would depend mainly on

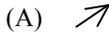
- (A) how frequently the tool is used
- (B) the environment in which the tool is used
- (C) the location in which the tool is used
- (D) the operator who is using the tool

38. What is 30.8 inches plus 15.4 inches plus 7.7 inches expressed in centimeters?

- (A) 117.30 cm
- (B) 136.91 cm
- (C) 138.11 cm
- (D) 147.70 cm

39. The overall ability of two or more operators to obtain consistent results repeatedly when measuring the same set of parts and using the same measuring equipment is the definition of

- (A) repeatability
- (B) precision
- (C) reproducibility
- (D) accuracy

40. A major defect is best described as one that
- (A) is more than 20% out of tolerance
 - (B) may be likely to cause unsafe conditions
 - (C) is found in the majority of units in a tested lot
 - (D) can cause a product to fail
41. When a company is establishing evidence of its own metrology capabilities, the most important factor is whether the company
- (A) meets the product schedule requirements
 - (B) uses measuring equipment of known accuracy
 - (C) can identify its calibration sources
 - (D) has certified quality assurance personnel
42. What is $118^{\circ} 45' 19.4''$ minus $106^{\circ} 51' 19.6''$?
- (A) $11^{\circ} 52' 57.8''$
 - (B) $11^{\circ} 53' 58.8''$
 - (C) $11^{\circ} 53' 59.8''$
 - (D) $12^{\circ} 53' 59.8''$
43. 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.
44. Which of the following measures of dispersion is equal to the sum of deviations from the mean squared divided by the sample size?
- (A) Range
 - (B) Standard deviation
 - (C) Variance
 - (D) Mode
45. According to Juran, the three basic processes used to manage quality are
- (A) planning, control, and improvement
 - (B) planning, accounting, and inspection
 - (C) planning, assurance, and auditing
 - (D) control, goals, and auditing
46. Which of the following symbols indicates circular runout?
- (A) 
 - (B) 
 - (C) 
 - (D) 
47. Which of the following is NOT necessary for team effectiveness?
- (A) The team's purpose is clearly understood and supported by all members.
 - (B) The team is accountable for specific measurable outcomes.
 - (C) A process exists for establishing goals and objectives.
 - (D) Company management directly participates as a team member.
48. An \bar{X} and R chart is used to
- (A) indicate process variation
 - (B) specify design limits
 - (C) interpret costs
 - (D) identify customer expectations
49. What is the diameter of a circle with an area of 112 square meters?
- (A) 5.97 meters
 - (B) 10.58 meters
 - (C) 11.94 meters
 - (D) 35.65 meters
50. When an instrument is used to measure the distance from features of a part to a reference surface, the length measurement provided is considered
- (A) absolute
 - (B) comparative
 - (C) discriminating
 - (D) contrasting

STOP.

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 CQI, please go to <http://www.asq.org/certification/Quality-inspector/bok.html>

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

Question	BOK	Correct Answer
26	I.C.	D
27	II.A.2	C
28	II.B.1	C
29	II.A.1	B
30	II.B.2	B
31	III.D.4	D
32	I.C.	A
33	II.B.3	A
34	II.D.2	D
35	II.F.1	D
36	IV.D.	A
37	II.F.1	A
38	I.E.	B
39	II.G.	C
40	III.C.5	D
41	II.F.3	B
42	I.A.	C
43	IV.B.1	B
44	IV.A.2	C
45	IV.C.1	A
46	III.A.2	A
47	IV.E.4	D
48	IV.B.2	A
49	I.C.	C
50	III.A.4	B

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. Technical Mathematics		9	<i>16</i>
II. Metrology		18	<i>30</i>
III. Inspection and Test		14	<i>30</i>
IV. Quality Assurance		9	<i>24</i>
GRAND TOTAL		50	<i>100</i>