



ASQ

Exam Questions CSSBB

Certified Six Sigma Black Belt

NEW QUESTION 1

- (Topic 1)

Calculate the interaction effect

Run #	A	B	Ave. Response
1	–	–	129
2	–	+	133
3	+	–	86
4	+	+	80

- A. 1.5
- B. 205
- C. –5
- D. 17
- E. –17

Answer: C

NEW QUESTION 2

- (Topic 1)

(Refer to the previous problem) To estimate the within treatment variance the experimenters would calculate the variances of:

- A. all 80 readings
- B. the five replications for each run
- C. the runs for which a factor is at its lowest level

Answer: B

NEW QUESTION 3

- (Topic 1)

The management team in the above problem assigns each goal a numerical value designating its importance. The “bulls eyes,” circles and triangles are replaced by the values 3, 2 and 1 respectively. Entries are made in each box by multiplying the 3, 2 or 1 by the goal value. The importance of each activity is calculated by adding the entries in its row.

	#1 (5)	#2 (8)	#3 (2)	Total
Activity #1	3 (15)			45
Activity #1		1 (8)	2 (4)	12
Activity #1	2 (10)	3 (24)		34
etc.				

- A. Affinity diagram
- B. Inter-relationship digraph
- C. Tree diagram
- D. Process decision program chart
- E. Matrix diagram
- F. Prioritization matrix

Answer: F

NEW QUESTION 4

- (Topic 1)

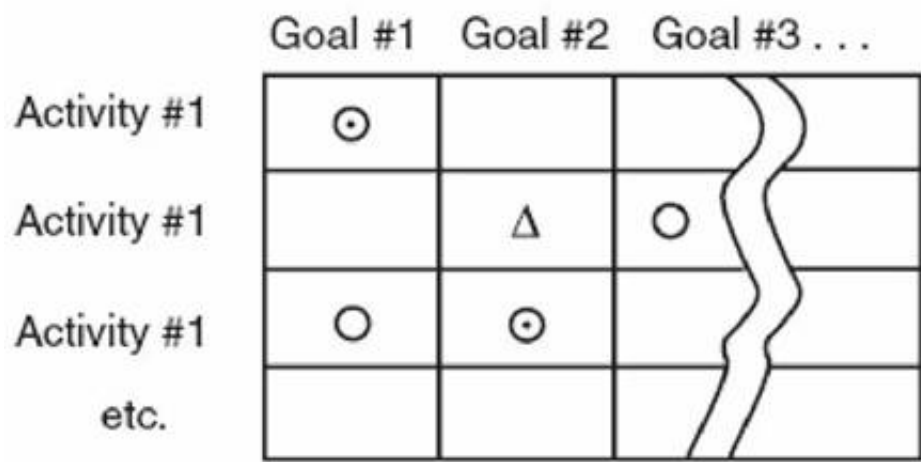
A higher resolution number for an experimental design indicates that:

- A. results are more clear
- B. confounding between main effects and interaction effects are less likely to be significant
- C. a higher number of replications have been used
- D. all factors have been tested at all levels
- E. the design is more balanced

Answer: B

NEW QUESTION 5

- (Topic 1)
A management team lists nine goals across the top of a rectangle and 15 activity initiatives along the left hand side of the rectangle. If one of the activities strongly supports one of the goals a circle is placed in the box where that activity's row intersects the goal's column. If the activity's support is very strong a "bulls eye" is placed in the box and if the support is weak a triangle is used. This best describes which problem solving tool?



- A. Affinity diagram
- B. Inter-relationship digraph
- C. Tree diagram
- D. Process decision program chart
- E. Matrix diagram
- F. Prioritization matrix
- G. Activity network diagram

Answer: E

NEW QUESTION 6

- (Topic 1)
Find the value of (1) in the ANOVA table. Assume:

$\alpha = 0.10$

ANOVA Table						
Source	SS	df	MS	F ratio	F crit	P-value
x	1.48	1	(1)	(2)	(3)	(4)
Y	18.6	1	(5)	(6)	(7)	(8)
xxY	12.2	1	(9)	(10)	(11)	(12)
Error	2.1	4	(13)			

- A. 16.4
- B. 3.2
- C. 18.6
- D. 23.2
- E. 4.54
- F. 12.2
- G. 0.525
- H. 2.82
- I. 1.48
- J. 35.4
- K. $0.10 < P < 1$
- L. $0.05 < P < 0.10$
- M. $0.01 < P < 0.05$
- N. $0.005 < P < 0.01$
- O. $0 < P < 0.005$

Answer: I

NEW QUESTION 7

- (Topic 1)
A team working with a plant relocation is tasked with designing a process for moving 180 pieces of equipment. Incoming orders may need to be filled during the move at either the old site or the new one. Transportation equipment availability is uncertain. Construction schedules at the new site is very weather dependent. The team designs a chart that attempts to cover these and other contingencies with appropriate measures dealing with each. The tool best fitted for this task is:

- A. Affinity diagram
- B. Inter-relationship digraph
- C. Tree diagram
- D. Process decision program chart
- E. Matrix diagram
- F. Prioritization matrix
- G. Activity network diagram

Answer: D

NEW QUESTION 8

- (Topic 1)

Is it safe to assume that the interaction effects are negligible?

Run #	A	B	Ave. Response
1	–	–	129
2	–	+	133
3	+	–	86
4	+	+	80

- A. yes
- B. no
- C. probably

Answer: C

NEW QUESTION 9

- (Topic 1)

A quality engineer employed by a hospital is asked to improve the process of medication storage in locked cabinets near patient doors. One defect that occurs rarely is that the medication caddy is left out when the cabinet is relocked. The engineer installs a gravity activated arm that will not permit the door to close when the caddy isn't inside. This improvement is best described by which approach to problem solving?

- A. 5S
- B. Poka yoke
- C. Kaizen
- D. PDCA
- E. Re-engineering

Answer: B

NEW QUESTION 10

- (Topic 1)

A population is bimodal with a variance of 5.77. One hundred samples of size 30 are randomly collected and the 100 sample means are calculated. The standard deviation of these sample means is approximately:

- A. 5.77
- B. 2.40
- C. 1.05
- D. 0.44
- E. 0.19

Answer: E

NEW QUESTION 10

- (Topic 1)

The team in the above problem draws arrows from Post-It® notes that are causes to notes that are the effects of these causes. This step is best described by which approach to problem solving?

- A. Affinity diagram
- B. Inter-relationship digraph
- C. Tree diagram
- D. Process decision program chart
- E. Matrix diagram
- F. Prioritization matrix
- G. Activity network diagram

Answer: B

NEW QUESTION 13

- (Topic 1)

A team wants a technique for improving consistency of assembly operations. They should use:

- A. written and diagrammed work instructions
- B. flow charts and process maps
- C. cause and effect diagrams
- D. Pareto chart

E. relationship matrix

Answer: A

NEW QUESTION 14

- (Topic 1)

This table displays the inventory of fasteners in a storage cabinet. An item is selected at random from the fastener cabinet. Find the approximate probability it is size $\frac{3}{4}$.

	size			
	.500	.625	.750	.875
Nut	146	300	74	41
Washer	280	276	29	32
Bolt	160	214	85	55

- A. .85
- B. .185
- C. .03
- D. .11
- E. none of the above

Answer: D

NEW QUESTION 19

- (Topic 1)

	size			
	.500	.625	.750	.875
Nut	146	300	74	41
Washer	280	276	29	32
Bolt	160	214	85	55

This table displays the inventory of fasteners in a storage cabinet. An item is selected at random from the fastener cabinet. Find the approximate probability it is larger than $\frac{1}{2}$.

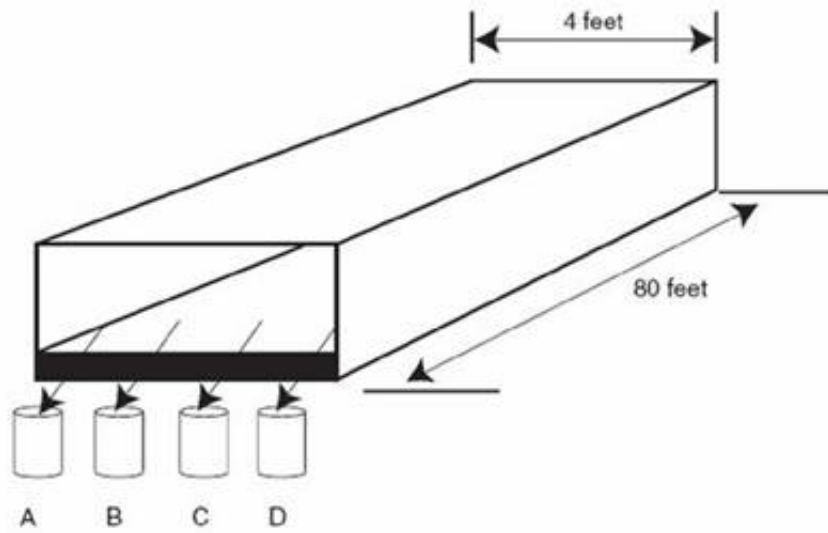
- A. .35
- B. .65
- C. .1106
- D. .47
- E. none of the above

Answer: B

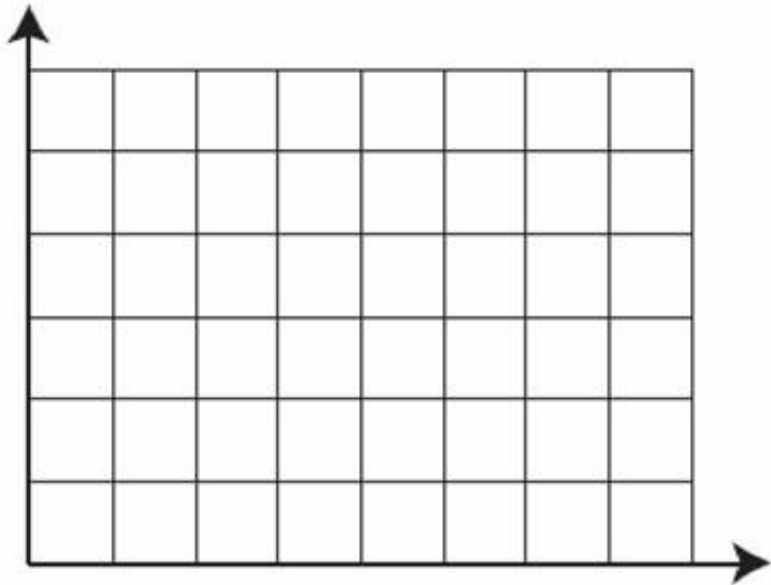
NEW QUESTION 20

- (Topic 1)

SCENARIO A Six Sigma team is measuring the moisture content of corn starch as it leaves the conveyer belt of a dryer. They collect one sample four cups of starch at times indicated in the chart at fixed locations labeled A, B, C, and D across the end of the belt. See the diagram below.



Find the equation of the regression line for these sample data points: (1, 7) (3, 3) (3, 2) (5, -1)



- A. $y = 10.8 - 2.9x$
- B. $y = 12.9 + 5.2x$
- C. $y = 16 - 3.7x$
- D. $y = 8.75 - 2x$
- E. $y = 22.6 - 4.8x$

Answer: D

NEW QUESTION 22

- (Topic 1)

The quality leader responsible for the term Total Quality Management (TQM):

- A. Juran
- B. Ishikawa
- C. Crosby
- D. Feigenbaum
- E. Taguchi
- F. none of the above

Answer: D

NEW QUESTION 26

- (Topic 1)

A team wants a technique for determining and displaying priorities based on frequency of various defect types. They should use:

- A. written and diagrammed work instructions
- B. flow charts and process maps
- C. cause and effect diagrams
- D. Pareto chart
- E. relationship matrix

Answer: D

NEW QUESTION 28

- (Topic 1)

An experiment has seven factors with two levels each. The experiment has eight runs. This experimental design is called:

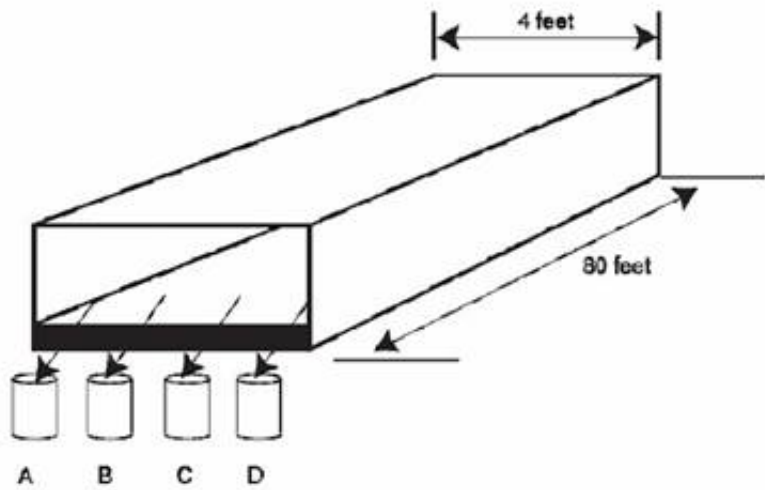
- A. full factorial design
- B. half fractional factorial design
- C. interaction
- D. none of the above

Answer: D

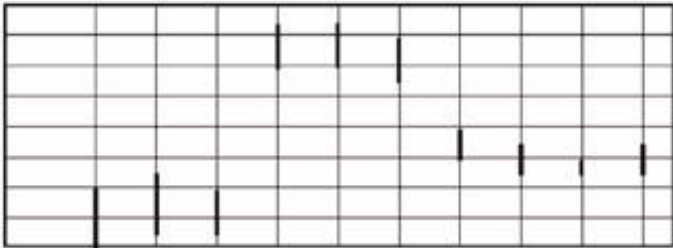
NEW QUESTION 32

- (Topic 1)

SCENARIO A Six Sigma team is measuring the moisture content of corn starch as it leaves the conveyer belt of a dryer. They collect one sample four cups of starch at times indicated in the chart at fixed locations labeled A, B, C, and D across the end of the belt. See the diagram below.



After some more work on the dryer, additional data are collected which when plotted looks like this:



Which type of variation dominates?

- A. within sample
- B. sample to sample within the hour
- C. hour to hour
- D. none of the above

Answer: C

NEW QUESTION 36

- (Topic 1)

Calculate the main effect of factor A (i. e. $A+ - A-$).

Run #	A	B	Ave. Response
1	-	-	129
2	-	+	133
3	+	-	86
4	+	+	80

- A. 46
- B. 129
- C. 83
- D. -46
- E. none of the above

Answer: E

NEW QUESTION 39

- (Topic 1)

A team wants a technique for obtaining a large number of possible reasons for excess variation in a dimension. They should use:

- A. written and diagrammed work instructions
- B. flow charts and process maps
- C. cause and effect diagrams
- D. Pareto chart
- E. relationship matrix

Answer: C

NEW QUESTION 40

- (Topic 1)

If the probability that event A occurs is 0.51, the probability that event B occurs is 0.64 and that probability that both A and B occur is 0.23 then:

- A. events A and B are complementary
- B. events A and B are mutually exclusive
- C. events A and B are supplementary
- D. events A and B are not mutually exclusive
- E. events A and B are statistically independent

Answer: D

NEW QUESTION 41

- (Topic 1)

Find the value of (7) in the ANOVA table. Assume:

$\alpha = 0.10$

ANOVA Table

Source	SS	df	MS	F ratio	F crit	P-value
x	1.48	1	(1)	(2)	(3)	(4)
Y	18.6	1	(5)	(6)	(7)	(8)
xxY	12.2	1	(9)	(10)	(11)	(12)
Error	2.1	4	(13)			

- A. 16.4
- B. 3.2
- C. 18.6
- D. 23.2
- E. 4.54
- F. 12.2
- G. 0.525
- H. 2.82
- I. 1.48
- J. 35.4
- K. $0.10 < P < 1$
- L. $0.05 < P < 0.10$
- M. $0.01 < P < 0.05$
- N. $0.005 < P < 0.01$
- O. $0 < P < 0.005$

Answer: E

NEW QUESTION 44

- (Topic 1)

This table displays the inventory of fasteners in a storage cabinet. A bolt is selected at random from the fastener cabinet. Find the approximate probability it is size 7/8.

	size			
	.500	.625	.750	.875
Nut	146	300	74	41
Washer	280	276	29	32
Bolt	160	214	85	55

- A. 11
- B. .08
- C. .09
- D. .30
- E. none of the above

Answer: A

NEW QUESTION 49

- (Topic 1)

A _____ from a sample is used to estimate a population _____. The two words that best fill these blanks are:

- A. item, value
- B. value, statistic
- C. statistic, parameter
- D. parameter, value
- E. parameter, statistic

Answer: C

NEW QUESTION 51

- (Topic 1)

After a team has engaged in diversion activities they may need to employ a tool for conversion. Examples of such a tool are: I. nominal group technique II. multivoting III. cause and effect diagram IV. activity network diagram V. matrix diagrams

- A. III and IV
- B. IV and V
- C. II and III
- D. I and II

Answer: D

NEW QUESTION 55

- (Topic 1)

A quality leader who did extensive work with Japanese industry is:

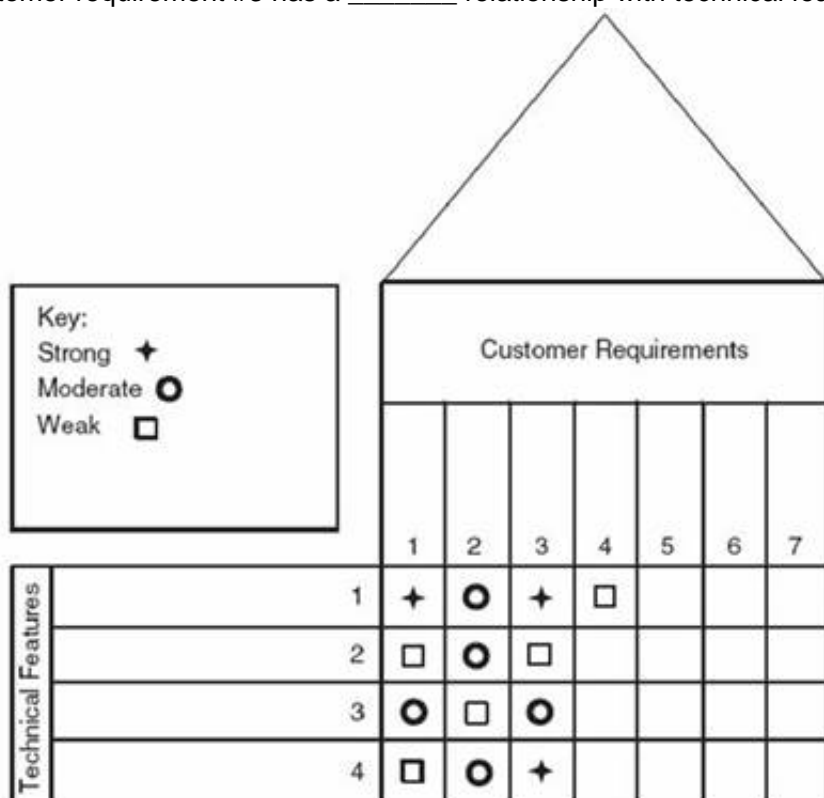
- A. Juran
- B. Ishikawa
- C. Deming
- D. Ohno
- E. Taguchi
- F. all of the above
- G. none of the above

Answer: F

NEW QUESTION 58

- (Topic 1)

Customer requirement #3 has a _____ relationship with technical feature #3.



- A. strong
- B. moderate
- C. weak

Answer: B

NEW QUESTION 59

- (Topic 1)

If DPU = 0.022, the RTU is approximately:

- A. 0.022
- B. 0.078
- C. 0.0022

- D. 0.98
- E. 0.098
- F. 0.0098

Answer: D

NEW QUESTION 61

- (Topic 1)

The primary metric for a project is reduced cost for process A .A consequential metric could be:

- A. reduced cycle time
- B. reduced scrap rate
- C. reduced set-up time
- D. all the above
- E. none of the above

Answer: D

NEW QUESTION 63

- (Topic 1)

In a resolution III fractional factorial experimental design, main effects are confounded with:

- A. one factor interactions
- B. two factor and higher interactions
- C. three factor and higher interactions
- D. no other effects

Answer: B

NEW QUESTION 67

- (Topic 1)

A team wants a technique for displaying the connection between various customer needs and various features on a product. They should use:

- A. written and diagrammed work instructions
- B. flow charts and process maps
- C. cause and effect diagrams
- D. Pareto chart
- E. relationship matrix

Answer: E

NEW QUESTION 69

- (Topic 1)

A project activity not on the critical path has required 20% longer than the time originally allocated. The project team should:

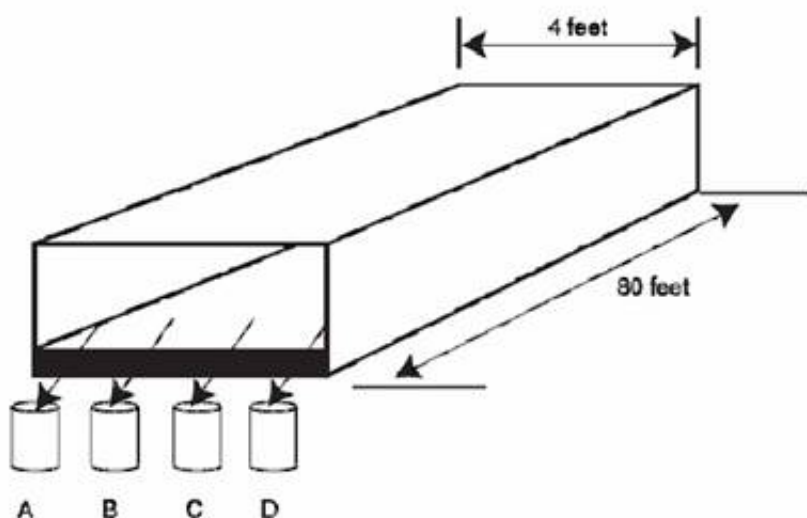
- A. inform all concerned that the entire project will be delayed by 20%
- B. inform all concerned that the entire project will be delayed but by less than 20%
- C. study the effect this will have on other activities because the project may still be on schedule

Answer: C

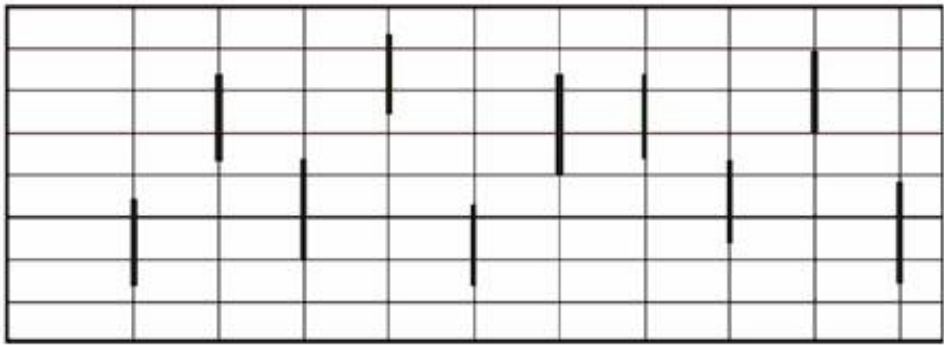
NEW QUESTION 71

- (Topic 1)

SCENARIO A Six Sigma team is measuring the moisture content of corn starch as it leaves the conveyer belt of a dryer. They collect one sample four cups of starch at times indicated in the chart at fixed locations labeled A, B, C, and D across the end of the belt. See the diagram below.



After some work on the dryer, additional data are collected which when plotted looks like this:



Which type of variation dominates?

- A. within sample
- B. sample to sample within the hour
- C. hour to hour
- D. none of the above

Answer: B

NEW QUESTION 73

- (Topic 1)
Customer segmentation refers to:

- A. dividing a particular customer into parts that are more easily understood
- B. grouping customers by one or more criteria
- C. maintaining secure customer listings to minimize communication among them
- D. eliminating or “cutting off” customers with poor credit history

Answer: B

NEW QUESTION 78

- (Topic 1)
The leader in the quality movement who recommended that organizations “eliminate numerical quotas for the work force and numerical goals for management.” :

- A. Juran
- B. Ishikawa
- C. Crosby
- D. Feigenbaum
- E. Taguchi
- F. none of the above

Answer: F

NEW QUESTION 82

- (Topic 1)
Find the value of (2) in the ANOVA table. Assume:

$\alpha = 0.10$:

ANOVA Table						
Source	SS	df	MS	F ratio	F crit	P-value
x	1.48	1	(1)	(2)	(3)	(4)
Y	18.6	1	(5)	(6)	(7)	(8)
xxY	12.2	1	(9)	(10)	(11)	(12)
Error	2.1	4	(13)			

- A. 16.4
- B. 3.2
- C. 18.6
- D. 23.2
- E. 4.54
- F. 12.2
- G. 0.525
- H. 2.82
- I. 1.48
- J. 35.4
- K. 0.10<P<1
- L. 0.05<P<0.10
- M. 0.01<P<0.05
- N. 0.005<P<0.01
- O. 0<P<0.005

Answer: H

NEW QUESTION 87

- (Topic 1)

A project that lacks a clear definition of its scope and boundaries runs the risk of:

- A. straying from the intended path
- B. trying to solve unrelated problems
- C. having difficulty in collecting baseline data
- D. suffering morale problems
- E. all the above
- F. none of the above

Answer: E

NEW QUESTION 91

- (Topic 2)

Use the reliability formula from the previous problem to find the reliability at MTBF.

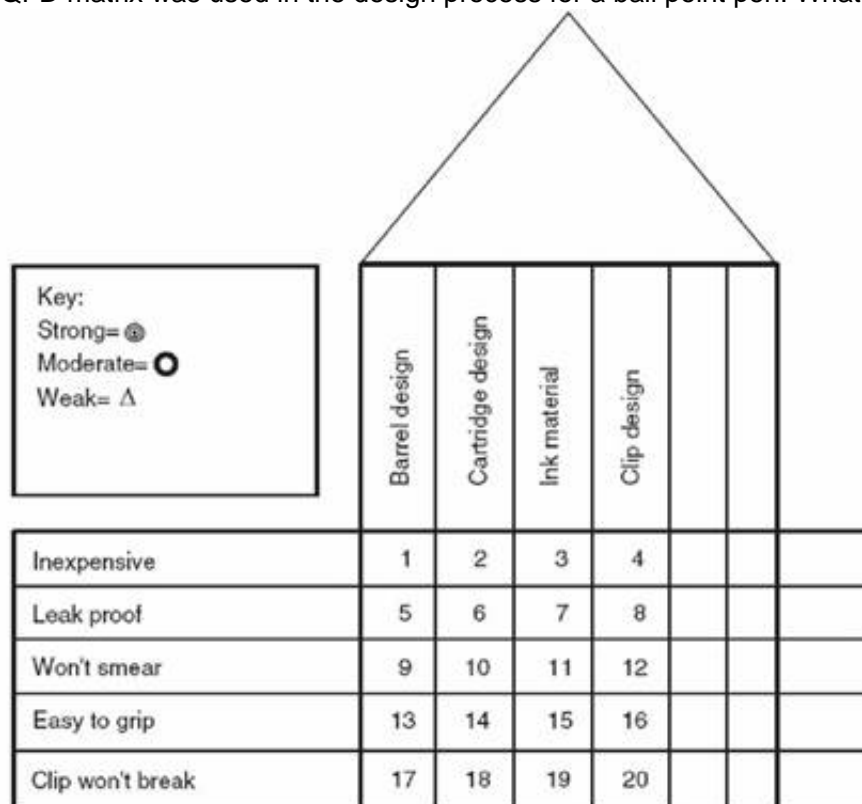
- A. 0.94
- B. 0.78
- C. 0.37
- D. 0.26
- E. none of the above

Answer: C

NEW QUESTION 93

- (Topic 2)

This QFD matrix was used in the design process for a ball point pen. What symbol is appropriate for the square labeled 11?



- A.
- B.
- C.

A. none of the above

Answer: B

NEW QUESTION 97

- (Topic 2)

An example of a project metric would be:

- A. the decrease in defect occurrence
- B. the decrease in product cost
- C. the decrease in cycle time
- D. all the above

Answer: D

NEW QUESTION 102

- (Topic 2)

A correct statement about the relationship between the terms parameter and statistic is:

- A. a population statistic is more accurate than a parameter
- B. a sample parameter is used to estimate a statistic
- C. a sample statistic is used to estimate a population parameter
- D. standard deviation calculations requires both statistics and parameters

Answer: C

NEW QUESTION 103

- (Topic 2)

Nominal Group Technique is used to:

- A. help a group reach consensus
- B. generate a group on new ideas
- C. provide a consistent stable group leadership
- D. provide a name for the group

Answer: A

NEW QUESTION 105

- (Topic 2)

The following is a set of individual measurements: 3 5 4 5 6 3 4 3 2 4 5 6 5 7 6 4 5 5 8 7 6 6 7 7 4
Find the control limits for the individuals chart.

- A. .7 and 11.2
- B. 1.6 and 8.6
- C. 2.7 and 7.5
- D. none of the above

Answer: D

NEW QUESTION 110

- (Topic 2)

When Tricia empties a box of capacitors she places it at a designated spot on her work table. Sam notices the empty box and brings a full box of capacitors from the stock room. This is an example of:

- A. visual factory
- B. kanban
- C. poka-yoke
- D. standard work
- E. set up time reduction (SMED)

Answer: B

NEW QUESTION 112

- (Topic 2)

If item A is more likely to be detected than item B which will have the highest Detection value?

- A. item A
- B. item B
- C. cannot be determined

Answer: B

NEW QUESTION 114

- (Topic 2)

The word takt is closest to the theory of constraints word:

- A. drum
- B. buffer
- C. rope
- D. constraint

Answer: A

NEW QUESTION 115

- (Topic 2)

The formula for reliability during constant failure rate conditions is: Use this formula to find the reliability of a product at 800 hours if MTBF = 600 hours.

- A. 0.87
- B. 0.78
- C. 0.37
- D. 0.26
- E. none of the above

Answer: D

NEW QUESTION 119

- (Topic 2)

A team wants a technique for obtaining a large number of possible reasons for excess variation in a dimension. They should use:

- A. written and diagrammed work instructions
- B. flow charts and process maps
- C. cause and effect diagrams
- D. Pareto chart
- E. relationship matrix

Answer: C

NEW QUESTION 121

- (Topic 2)

The null hypothesis should be:

- A. rejected
- B. not rejected
- C. accepted

Answer: A

NEW QUESTION 122

- (Topic 2)

Find the value of (10) in the ANOVA table. Assume:

$$\alpha = 0.10:$$

ANOVA Table

Source	SS	df	MS	F ratio	F crit	P-value
x	1.48	1	(1)	(2)	(3)	(4)
Y	18.6	1	(5)	(6)	(7)	(8)
xxY	12.2	1	(9)	(10)	(11)	(12)
Error	2.1	4	(13)			

- A. 16.4
- B. 3.2
- C. 18.6
- D. 23.2
- E. 4.54
- F. 12.2
- G. 0.525
- H. 2.82
- I. 1.48
- J. 35.4
- K. $0.10 < P < 1$
- L. $0.05 < P < 0.10$
- M. $0.01 < P < 0.05$
- N. $0.005 < P < 0.01$
- O. $0 < P < 0.005$

Answer: D

NEW QUESTION 123

- (Topic 2)

The team development stage characterized by expression of individual opinions and ideas often without regard for team objectives is known as:

- A. performing
- B. norming
- C. conflicting
- D. storming
- E. brainstorming

Answer: D

NEW QUESTION 124

- (Topic 2)

A control chart is to be used to display the number of non-conducting diodes. Each point on the chart represent the number of bad diodes in a box of 1000. The appropriate control chart to use is:

- A. x-bar and R
- B. median
- C. individual and moving range
- D. p
- E. np
- F. u
- G. c

Answer: E

NEW QUESTION 127

- (Topic 2)
Calculate the main effect of factor A:

	A	B	Res.
1	–	–	20
2	–	+	30
3	+	–	40
4	+	+	50

- A. 20
- B. 25
- C. 30
- D. 40
- E. none of the above

Answer: A

Explanation:

A factorial experiment can be analyzed using ANOVA or regression analysis[citation needed]. It is relatively easy to estimate the main effect for a factor. To compute the main effect of a factor "A", subtract the average response of all experimental runs for which A was at its low (or first) level from the average response of all experimental runs for which A was at its high (or second) level.

NEW QUESTION 130

- (Topic 2)
Find the value of (11) in the ANOVA table. Assume:

$\alpha = 0.10$

ANOVA Table						
Source	SS	df	MS	F ratio	F crit	P-value
x	1.48	1	(1)	(2)	(3)	(4)
Y	18.6	1	(5)	(6)	(7)	(8)
xxY	12.2	1	(9)	(10)	(11)	(12)
Error	2.1	4	(13)			

- A. Choices Not available (but this Question Answer E)

Answer: A

NEW QUESTION 132

- (Topic 2)
A process shows the following number of defectives. Each sample size for this process is 85.3 8 2 7 7 6 8 8 9 5 Find the control limits.

- A. none and 13.5
- B. 12.6 and 25.2
- C. none and 25.2
- D. none of the above

Answer: A

NEW QUESTION 133

- (Topic 2)
Find the mean, median and mode of the following data set: 9, 11, 12, 12, 14, 18, 18, 18, 20, 23:

- A. 15.5, 18, 18
- B. 15, 14, 18
- C. 14, 16, 18
- D. 15, 12, 18
- E. 15.5, 16, 18

Answer: E

NEW QUESTION 134

- (Topic 2)

An advantage of using standard deviation rather than range for measuring dispersion of a large sample is that:

- A. standard deviation has a simpler formula
- B. calculators have a standard deviation key but not a range key
- C. standard deviation uses information from each measurement
- D. range calculations are not normally distributed

Answer: C

NEW QUESTION 136

- (Topic 2)

A normal probability plot is used to:

- A. determine whether the distribution is normal
- B. plot z values
- C. determine process capability
- D. find percent out of specification

Answer: A

NEW QUESTION 137

- (Topic 2)

An full factorial experiment has three factors. Each factor has three levels. The number of test combinations or runs is:

- A. 9
- B. 6
- C. 27
- D. 36
- E. 33

Answer: C

NEW QUESTION 141

- (Topic 2)

The diameters of 50 randomly selected shafts have a mean of 1.525 and standard deviation of 0.006. Find the 95% lower confidence limit for the population mean.

- A. 1.523
- B. 1.524
- C. 1.525
- D. 1.526
- E. 1.527

Answer: A

Explanation:

n = 50 mean = 1.525

Standard deviation = 0.006 95% confidence interval = 1.96

\bar{x}

-z/2 /n

* 1.525-1.96(0.006/50)

* 1.525-0.00166=1.523

NEW QUESTION 146

- (Topic 2)

Find Cpk

- A. 2.00
- B. 0.56
- C. 1.33
- D. 0.44

Answer: D

NEW QUESTION 150

- (Topic 2)

A team wants to make a schedule for a project showing which tasks must be done sequentially and which may be done simultaneously. Which tool is most appropriate?

- A. matrix diagram
- B. cause and effect diagram
- C. process decision program chart
- D. affinity diagram
- E. activity network diagram
- F. tree diagram

- G. prioritization matrix
- H. matrix diagram
- I. interrelationship digraph

Answer: E

NEW QUESTION 155

- (Topic 2)

Work performed by the payroll department is considered value added activity.

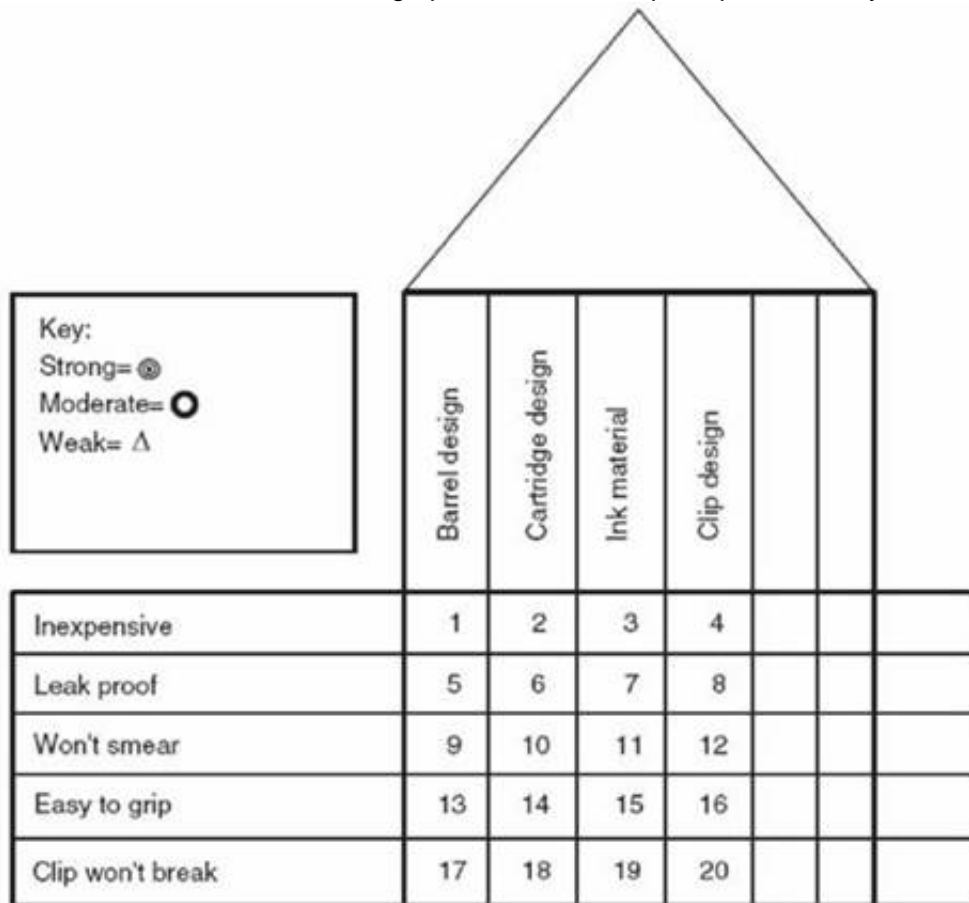
- A. true
- B. false

Answer: B

NEW QUESTION 158

- (Topic 2)

This QFD matrix was used in the design process for a ball point pen. What symbol is appropriate for the square labeled 8?



- A.
- B.
- C.

A. none of the above

Answer: D

NEW QUESTION 162

- (Topic 2)

An indication of the experimental error is available because the design has:

- A. multiple replications
- B. multiple levels
- C. multiple factors

Answer: A

NEW QUESTION 167

- (Topic 2)

What is the value of the test statistic?

- A. 0.898
- B. 1.251
- C. 0.429
- D. 3.57
- E. none of the above

Answer: E

Explanation:

As per reference to the given table in the URL, the 0.05 at 6 is 2.447. Hence none of the answers are correct.
 Reference: <http://www.medcalc.org/manual/t-distribution.php>

NEW QUESTION 169

- (Topic 2)

If the value of the test statistic had been 7.03, what action should have been taken regarding the null hypothesis?

- A. rejected
- B. accepted
- C. not rejected
- D. none of the above

Answer: A

NEW QUESTION 174

- (Topic 2)

If item A is more likely to be detected than item B which will have the highest Severity value?

- A. item A
- B. item B
- C. cannot be determined

Answer: C

NEW QUESTION 175

- (Topic 2)

Find the value of b or b0:

- A. 3.33
- B. -3.33
- C. 4.08
- D. -4.08
- E. 1.24
- F. -1.24

Answer: B

NEW QUESTION 177

- (Topic 2)

This experimental design is:

- A. full factorial
- B. half factorial
- C. quarter factorial
- D. none of the above

Answer: B

NEW QUESTION 180

- (Topic 2)

Successful Six Sigma projects always:

- A. use designed experiments
- B. impact the bottom line of the enterprise
- C. are completed in a short time frame
- D. all of the above
- E. none of the above

Answer: B

NEW QUESTION 182

- (Topic 2)

A frequent cause of system sub optimization is:

- A. optimizing individual processes
- B. failing to draw a system flow chart
- C. using data with outliers
- D. failing to consider the normal distribution

Answer: A

NEW QUESTION 183

- (Topic 2)

A robust design is one which:

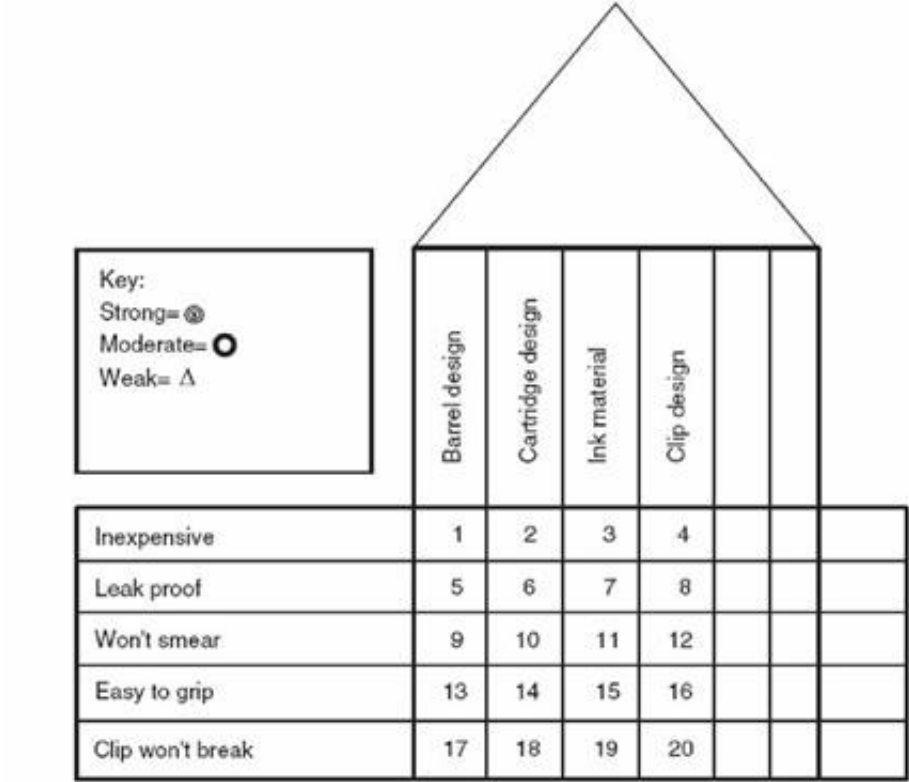
- A. has high reliability
- B. has low maintenance frequency
- C. is simple to manufacture
- D. is resistant to varying environmental conditions

Answer: D

NEW QUESTION 185

- (Topic 2)

This QFD matrix was used in the design process for a ball point pen. What symbol is appropriate for the square labeled 10?



- A.
- B.
- C.

A. none of the above

Answer: A

NEW QUESTION 188

- (Topic 2)

An x-bar control chart has been established with control limits of 3.245 and 3.257, n = 5. An engineer collects the following sample and plots the average on the control chart: 3.257, 3,256, 3. 258, 3.259

- A. the process is out of control
- B. the process is not out of control
- C. the engineer misused the control chart
- D. the control limits are incorrect

Answer: C

NEW QUESTION 191

- (Topic 2)

There have been some instances in which 1.5 inch sheet metal screws are used where 1.25 inch should have been used. This produces a critical defect. The decision is made to have all 1.25 inch screws have a square reduced head and all 1.5 inch screws be Phillips. This is an example of:

- A. visual factory
- B. kanban
- C. poka-yoke
- D. standard work
- E. set up time reduction (SMED)

Answer: C

NEW QUESTION 192

- (Topic 2)

A principle advantage of fractional factorial experimental designs is:

- A. reduced cost
- B. improved accuracy
- C. increased confounding
- D. higher confidence level
- E. reduced probability of type II errors

Answer: A

NEW QUESTION 197

- (Topic 2)

Data are collected in xy pairs and a scatter diagram shows the points are grouped very close to a straight line that tips down on its right hand end. A reasonable value for the coefficient of correlation is:

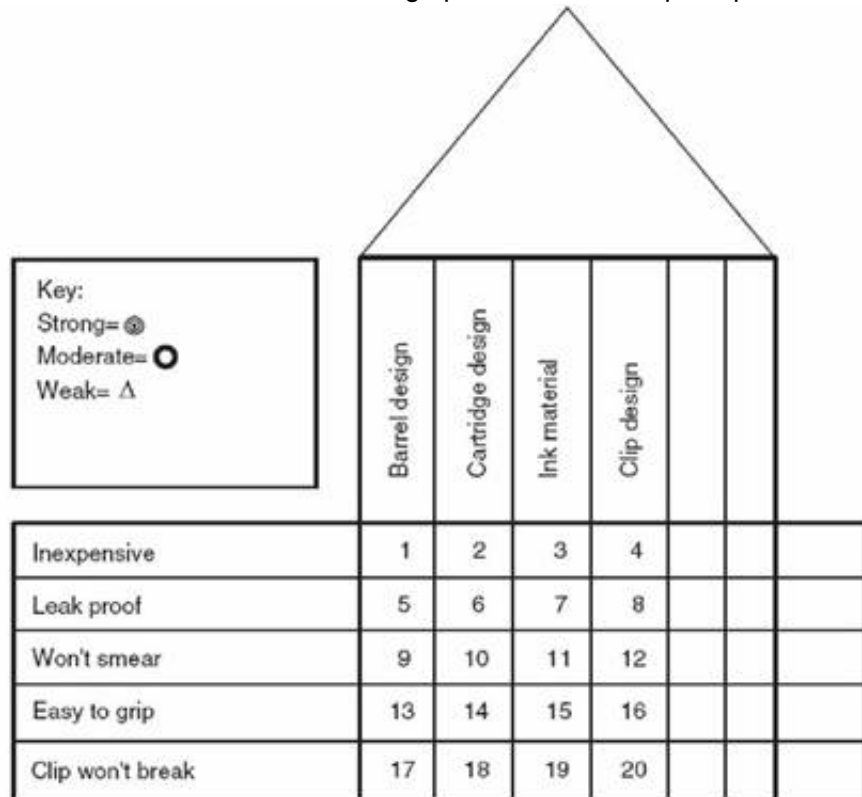
- A. .8
- B. −.9
- C. 1
- D. 1.3
- E. −1.8

Answer: C

NEW QUESTION 199

- (Topic 2)

This QFD matrix was used in the design process for a ball point pen. What symbol is appropriate for the square labeled 12?



- A.
- B.
- C.

A. none of the above

Answer: D

NEW QUESTION 200

- (Topic 2)

A principle disadvantage of fractional factorial experimental designs is:

- A. reduced cost
- B. improved accuracy
- C. confounding of effects
- D. higher confidence level
- E. reduced probability of type II errors

Answer: C

NEW QUESTION 201

- (Topic 2)

A newspaper article describes a high positive correlation between obesity and orange juice consumption among six-year-olds. Parents who restrict the use of orange juice for their children have:

- A. made a type I error
- B. made a type II error
- C. misunderstood margin of error
- D. confused correlation with causation

Answer: D

NEW QUESTION 202

- (Topic 2)

A team wants a technique for displaying the connection between various customer needs and various features on a product. They should use:

- A. written and diagrammed work instructions
- B. flow charts and process maps
- C. cause and effect diagrams
- D. Pareto chart
- E. relationship matrix

Answer: E

NEW QUESTION 206

- (Topic 2)

Proposed Six Sigma projects that are not in some way linked to organizational goals:

- A. will typically be short term
- B. use statistical inference
- C. have a high risk of failure
- D. should not be approved
- E. none of the above

Answer: D

NEW QUESTION 208

- (Topic 2)

Find the value of m or b1:

- A. 0.25
- B. 0.63
- C. 0.75
- D. 1.22

Answer: C

NEW QUESTION 213

- (Topic 2)

A team has completed a brainstorming session that has generated a large number of ideas. The team needs to organize these ideas in natural groupings. Which tool is most appropriate?

- A. matrix diagram
- B. cause and effect diagram
- C. process decision program chart
- D. affinity diagram
- E. activity network diagram
- F. tree diagram
- G. prioritization matrix
- H. matrix diagram
- I. interrelationship digraph

Answer: D

NEW QUESTION 214

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