

**Exam Code: ICGB**

**Exam Name: IASSC Certified Lean Six Sigma Green Belt**



**Exam A**

**QUESTION 1**

Measurement System Analysis is a procedure used to quantify variation of the method or system used for taking measurements.

- A. True
- B. False

**Correct Answer: A**

**Section:**

**QUESTION 2**

Hypothesis Tests determine the probabilities of differences between observed data and the hypothesis being solely due to chance. This is determined based on the result of the \_\_\_\_\_.

- A. Random acts
- B. P-values
- C. Standard Deviations
- D. R-values

**Correct Answer: B**

**Section:**

**QUESTION 3**

It is a Type I error if we reject the Null Hypothesis when it is actually true.

- A. True
- B. False

**Correct Answer: A**

**Section:**

**QUESTION 4**

Inferential Statistics is largely about Significance. There are both Practical and \_\_\_\_\_ Significance to consider during an analysis of data in a Lean Six Sigma project.

- A. Problematic
- B. Impractical
- C. Usable
- D. Statistical

**Correct Answer: D**

**Section:**

**QUESTION 5**

Having an Alpha of .05 and a Beta of .10 are the most common risk levels when running a Statistical test.



- A. True
- B. False

**Correct Answer: A**

**Section:**

**QUESTION 6**

The Alpha level of a test (level of significance) represents the yardstick against which P-values are measured and the Null Hypothesis is rejected if the P-value is which of these?

- A. Less than the Alpha level.
- B. Greater than the Alpha level.
- C. Greater than the Beta and Alpha level.
- D. Less than one minus Alpha.
- E. Less than the power of one minus Beta.

**Correct Answer: A**

**Section:**

**QUESTION 7**

A 1-Sample t-test is used when you want to compare the Median of one distribution to a target value.

- A. True
- B. False

**Correct Answer: B**

**Section:**

**QUESTION 8**

Contingency Tables are used to perform which of these functions?

- A. Illustrate one-tail proportions
- B. Analyze the 'what if' scenario
- C. Contrast the Outliers under the tail
- D. Compare more than two sample proportions with each other

**Correct Answer: D**

**Section:**

**QUESTION 9**

For the data shown here a Belt suspects the three grades are supplying the same results.



Grade A	Grade B	Grade C
0.917	1.1	0.63
0.68	0.173	4.17
1.74	0.24	0.6
0.3	0.67	0.84
0.33	6.94	0.22
4.13		

Which statement(s) are true for proper Hypothesis Testing?

- A. The most appropriate Central Tendency to test is the Means
- B. An appropriate test to test Central Tendency is the Levene's test
- C. An appropriate test to test Central Tendency is the ANOVA test
- D. An appropriate test to test Central Tendency is the Mood's Median test

**Correct Answer: D**

**Section:**

**QUESTION 10**

A Six Sigma tool that helps to screen factors by using graphical techniques to logically subgroup multiple discrete X's plotted against a continuous Y is known as a \_\_\_\_\_ Chart.

- A. SIPOC
- B. Multi-Vari
- C. Box Plot
- D. Whisker

**Correct Answer: B**

**Section:**

**QUESTION 11**

A primary benefit of using a Multi-Vari Chart is it provides a visual presentation of two-way interactions.

- A. True
- B. False

**Correct Answer: A**

**Section:**

**QUESTION 12**

Skewed, or Mixed, Distributions occur when data comes from several sources that are supposed to be the same yet are not.

- A. True

B. False

**Correct Answer: A**

**Section:**

**QUESTION 13**

When two Inputs have an impact on the Output together yet seem to have no or little impact on their own this is called a/an \_\_\_\_\_.

- A. Interaction
- B. Oddity
- C. Coincidence
- D. Impossibility

**Correct Answer: A**

**Section:**

**QUESTION 14**

According to a manager it takes an average weekday commute of 39 minutes with a Standard Deviation of 7 minutes for the employees to get to work while they use their personal vehicles for their office commute while the management set a policy of not more than 40 minutes for their daily one-way commute. A survey conducted one day on 70 employees showed an average of 34 minutes commuting time using the metro public transportation system with a Standard Deviation of 21 minutes. If the Standard Deviation is uncontrollable then the other option to increase the probability of coming in on time via personal vehicles to work could be \_\_\_\_\_?

- A. Increase the average time of commute
- B. Maintain the average time of commute and change route to work
- C. Reduce average commute time to work by departing earlier
- D. Change policy at work and request for flexible times based on location



**Correct Answer: C**

**Section:**

**QUESTION 15**

Which of the following is used to test the significance for the analysis of a Variance Table?

- A. t Test
- B. F Test
- C. Chi Square Test
- D. Acid Test

**Correct Answer: B**

**Section:**

**QUESTION 16**

Non-parametric testing is done when which of these are applicable? (Note: There are 3 correct answers).

- A. When the traditional t tests don't produce the results we need
- B. A Hypothesis Test for the Median of the population is in question
- C. It does not require data to come from Normally Distributed populations
- D. They look at the Median rather than the Mean of populations

E. When there are no parameters to measure in the process

**Correct Answer: B, C, D**

**Section:**

**QUESTION 17**

The Mann-Whitney Test is used to test if the Means for two samples are different.

- A. True
- B. False

**Correct Answer: B**

**Section:**

**QUESTION 18**

A 1-Sample t-test is used to compare an expected population Mean to a target.

- A. True
- B. False

**Correct Answer: A**

**Section:**

**QUESTION 19**

Unequal Variances can be the result of differing types of distributions.

- A. True
- B. False

**Correct Answer: A**

**Section:**

**QUESTION 20**

Due to excessive pollution, GREEN Solutions Inc. is considering subsidizing public transportation to work for its employees. According to the manager it takes an average weekday commute of 39 minutes with a Standard Deviation of 7 minutes for the employees to get to work while they use their personal vehicles for their office commute while the management set a policy of not more than 40 minutes for their daily one-way commute. A survey conducted one day on 70 employees showed an average of 34 minutes commuting time using the metro public transportation system with a Standard Deviation of 21 minutes. Assuming a Normal Distribution for the commute times by either personal or public transportation, which of these is true?

- A. The probability that they would arrive on time using personal vehicles is much higher than using the metro public transportation system (MPTS)
- B. The probability that they would arrive on time using the MPTS is much higher than using their personal vehicles
- C. The two probabilities are about the same excepting in one case the consistency is higher than the other
- D. We need to compile more data around weekends to incorporate for traffic differences
- E. When Standard Deviation is higher the probability goes down and so the MPTS is worse

**Correct Answer: B**

**Section:**

**QUESTION 21**



According to a manager it takes an average weekday commute of 39 minutes with a Standard Deviation of 7 minutes for the employees to get to work when they use their personal vehicles for their office commute while management set a policy of not more than 40 minutes for their daily one-way commute. A survey conducted one day on 70 employees showed an average of 34 minutes commuting time using the metro public transportation system with a Standard Deviation of 21 minutes. For the employees choosing to increase their chances to come on time using personal transportation their variation should be reduced to \_\_\_\_\_?

- A. 1 minute
- B. 6 minutes
- C. 3.5 minutes
- D. Eliminate it to 0.0 minutes

**Correct Answer: C**

**Section:**

#### QUESTION 22

The use of station warning lights, tool boards and jidohka devices in the application of Lean accomplish which of these principles?

- A. Pilferage Minimization
- B. Visual Factory
- C. Management Awareness
- D. Operator Attentiveness

**Correct Answer: B**

**Section:**

#### QUESTION 23

A Lean Principle that addresses efficiency by the process worker is called \_\_\_\_\_?



- A. Visual Factory
- B. Supervising
- C. Training
- D. Standardizing

**Correct Answer: D**

**Section:**

#### QUESTION 24

While management of a company must set the stage for all improvement efforts, which of these 5S's is primarily driven by management?

- A. Straighten
- B. Sort
- C. Shine
- D. Sustain

**Correct Answer: D**

**Section:**

#### QUESTION 25

As part of a Visual Factory plan \_\_\_\_\_ cards are created and utilized to identify areas in need of cleaning and organization.

- A. Kanban
- B. Kaizen
- C. Poke-Yoke
- D. WhoSai

**Correct Answer: A**

**Section:**

**QUESTION 26**

The use of Kanbans work best with pull systems for determining the timing of which products or services are produced.

- A. True
- B. False

**Correct Answer: A**

**Section:**

**QUESTION 27**

When a Belt applies the practice of Poka-Yoke to a project challenge she is attempting to make certain the activity is \_\_\_\_\_.

- A. Well documented
- B. Removed from the line
- C. Mistake proofed
- D. Highly visible

**Correct Answer: C**

**Section:**

**QUESTION 28**

The Lean Principle action in the 5S approach that deals with having those items needed regularly at hand and those items need less regularly stored out of the way is known as \_\_\_\_\_.

- A. Shining
- B. Standardizing
- C. Sustaining
- D. Sorting

**Correct Answer: D**

**Section:**

**QUESTION 29**

SPC on the outputs is more preferred than SPC on the inputs when implementing SPC for your process.

- A. True
- B. False

**Correct Answer: B**





**Section:**

**QUESTION 30**

Significant variation in process performance is a consequence of several causes that can be classified using which of the terminologies shown. (Note: There are 2 correct answers).

- A. Common
- B. Random
- C. Uneducated
- D. Special
- E. Vital

**Correct Answer: A, D**

**Section:**

**QUESTION 31**

When it comes to Control one of the most effective means of eliminating defects is to \_\_\_\_\_ .

- A. Train personnel often and thoroughly
- B. Keep a Six Sigma project going on the process at all times
- C. Design defect prevention into the product
- D. Have each process consist of no more than five steps

**Correct Answer: C**

**Section:**

**QUESTION 32**

A periodic time frame can be used to arrange for Control Limit and Center Line calculations with good SPC implementation in a process.

- A. True
- B. False

**Correct Answer: A**

**Section:**

**QUESTION 33**

The data on SPC charts are typically constructed such that they have the most recent data point on the right hand side.

- A. True
- B. False

**Correct Answer: A**

**Section:**

**QUESTION 34**

Which statement(s) describe an undesirable situation when implementing SPC?

- A. The lower Control Limit for the R chart is equal to zero



- B. Attempt to use SPC for tracking transaction times at a warehouse
- C. A process is in Statistical Control before implementation of SPC
- D. The Control Limits are wider than the customer specification limits

**Correct Answer: D**

**Section:**

**QUESTION 35**

If a process has Outliers which pair of charts is most preferable if subgroups will exist for the Continuous Data?

- A. Individual---Moving Range
- B. Xbar-R Charts
- C. Xbar-S Charts
- D. nP and P Charts

**Correct Answer: B**

**Section:**

**QUESTION 36**

After a Belt has put data through the smoothing process which chart would be used to look for trends in the data?

- A. Moving Average Chart
- B. Multi-Vari Chart
- C. X bar Chart
- D. Pareto Chart

**Correct Answer: A**

**Section:**

**QUESTION 37**

A Belt concludes a Lean Six Sigma project with the creation of a Control Plan. At what point can the Control Plan be closed?

- A. Never, a Control Plan is a living document
- B. As soon as the Champion signs off
- C. Within 30 days of the LSS project review team meeting
- D. After the project has been presented at the recognition event

**Correct Answer: A**

**Section:**

**QUESTION 38**

When analyzing a data set we frequently graph one metric as a function of another. If the slope of the Correlation line is -2.5 we would say the two metrics are \_\_\_\_\_ correlated?

- A. Positively
- B. Not
- C. Negatively
- D. None



**Correct Answer: C**

**Section:**

**QUESTION 39**

Multiple Linear Regressions (MLR) is best used when which of these are applicable? (Note: There are 3 correct answers).

- A. Non-linear relationships between the inputs X's and output Y
- B. Uncertainty in the slope of the linear relationship between an X and a Y
- C. Relationships between Y (output) and more than one X (Input)
- D. Preventing the use of a Designed Experiment if unnecessary
- E. We assume that the X's are independent of each other

**Correct Answer: C, D, E**

**Section:**

**QUESTION 40**

Fractional Factorial designs for an experimental approach are used when \_\_\_\_\_ about the multiple metric interaction in a process.

- A. Much is known
- B. Little is known
- C. We don't care
- D. Data exists

**Correct Answer: B**

**Section:**



**QUESTION 41**

A Belt will occasionally do a quick experiment referred to as an OFAT which stands for \_\_\_\_\_.

- A. Only a Few Are Tested
- B. Opposite Factors Affect Technique
- C. One Factor At a Time
- D. Ordinary Fractional Approach Technique

**Correct Answer: C**

**Section:**

**QUESTION 42**

Which statement(s) are correct for the Regression Analysis shown here? (Note: There are 2 correct answers).

### Regression Analysis: HeatFlux versus %Cu, Thickness

The Regression Equation is

$$\text{HeatFlux} = 484 + 4.80 \%Cu - 24.2 \text{ Thickness}$$

Predictor	Coef	SE Coef	T	P
Constant	483.67	39.57	12.22	0.000
%Cu	4.7963	0.9511	5.04	0.000
Thickness	-24.215	1.941	-12.48	0.000

S = 8.93207 R-Sq = 85.9% R-Sq(adj) = 84.8%

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	2	12607.6	6303.8	79.01	0.000
Residual Error	26	2074.3	79.8		
Total	28	14681.9			

Source	DF	Seq SS
%Cu	1	184.5
Thickness	1	12423.1

Unusual Observations

Obs	%Cu	HeatFlux	Fit	SE Fit	Residual	St Resid
1	40.6	271.80	274.74	5.08	-2.94	-0.40 X
22	36.3	254.50	230.91	2.39	23.59	2.74R

R denotes an observation with a large standardized residual.

X denotes an observation whose X value gives it large influence.

- A. This Regression is an example of a Multiple Linear Regression.
- B. This Regression is an example of Cubic Regression.
- C. %Cu explains the majority of the process variance in heat flux.
- D. Thickness explains over 80% of the process variance in heat flux.
- E. The number of Residuals in this Regression Analysis is 26.



**Correct Answer: A, D**

**Section:**

#### QUESTION 43

The Regression Model for an observed value of Y contains the term  $\beta_0$  which represents the Y axis intercept when X = 0.

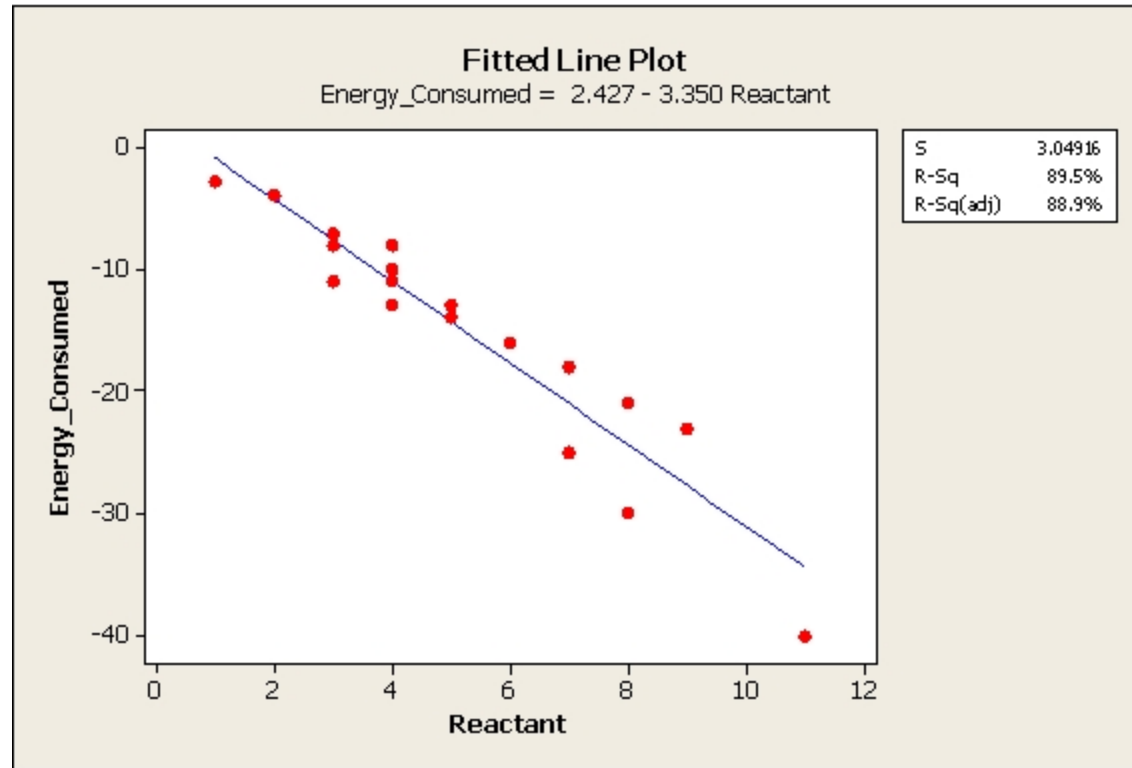
- A. True
- B. False

**Correct Answer: A**

**Section:**

#### QUESTION 44

Which statement(s) are true about the Fitted Line Plot shown here? (Note: There are 2 correct answers).



- A. When Reactant increases, the Energy Consumed increases.
- B. The slope of the equation is a positive 130.5.
- C. The predicted output Y is close to -18 when the Reactant level is set to 6.
- D. Over 85 % of the variation of the Energy Consumed is explained by the Reactant via this Linear Regression.

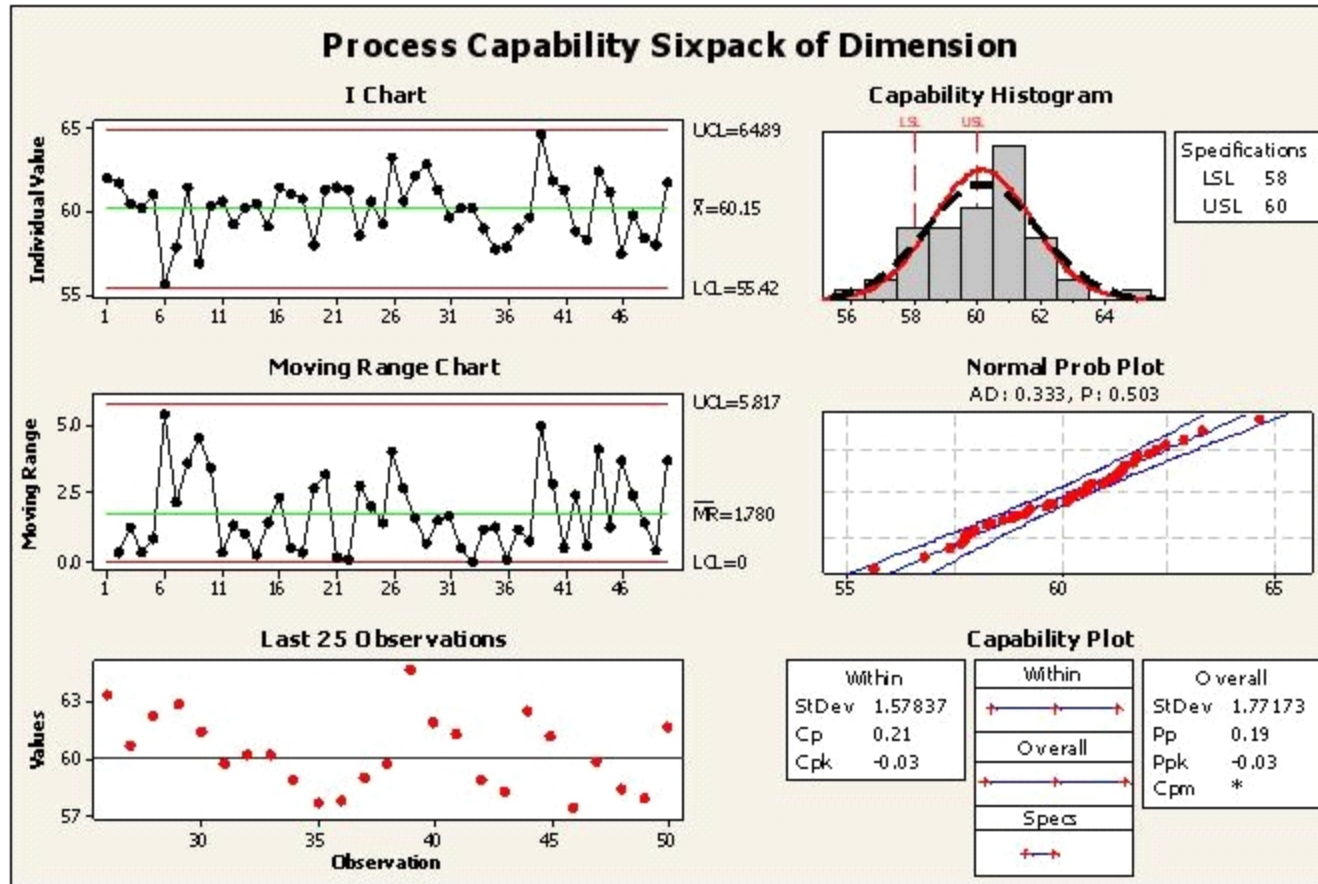
**Correct Answer: C, D**

**Section:**

**QUESTION 45**

After reviewing the Capability Analysis shown here select the statement(s) that are untrue.





- A. The process is properly assumed to be a Normal process
- B. The Mean of the process moving range is 1.78
- C. The process is out of Control
- D. This Capability Analysis used subgroups
- E. Majority of the dimensional values are outside of the tolerance than within

**Correct Answer: A**

**Section:**

**QUESTION 46**

The actual experimental response data varied somewhat from what a Belt had predicted them to be. This is the result of which of these?

- A. Inefficiency of estimates
- B. Residuals
- C. Confounded data
- D. Gap Analysis

**Correct Answer: B**

**Section:**

**QUESTION 47**

Multiple Linear Regressions (MLR) is best used when which of these are applicable? (Note: There are 3 correct answers).

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- C. Relationships between Y (output) and more than one X (Input)
- D. Preventing the use of a Designed Experiment if unnecessary
- E. We assume that the X's are independent of each other

**Correct Answer: C, D, E**

**Section:**

**QUESTION 48**

The generation of a Regression Equation is justified when we \_\_\_\_\_. (Note: There are 4 correct answers).

- A. Expect the relationship to be Linear between the output and inputs
- B. Know that there is a non-linear relationship between output and input(s)
- C. Need to understand how to control a process output by controlling the input(s)
- D. Experience several process defects and have no other way to fix hem
- E. When it is very expensive or too late to measure the output

**Correct Answer: A, C, D, E**

**Section:**

**QUESTION 49**

Which statement(s) are correct for the Regression Analysis shown here? (Note: There are 2 correct answers).

**Regression Analysis: HeatFlux versus %Cu, Thickness**

The Regression Equation is

$$\text{HeatFlux} = 484 + 4.80 \%Cu - 24.2 \text{ Thickness}$$

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Correct Answer: A, D

Section:

QUESTION 50

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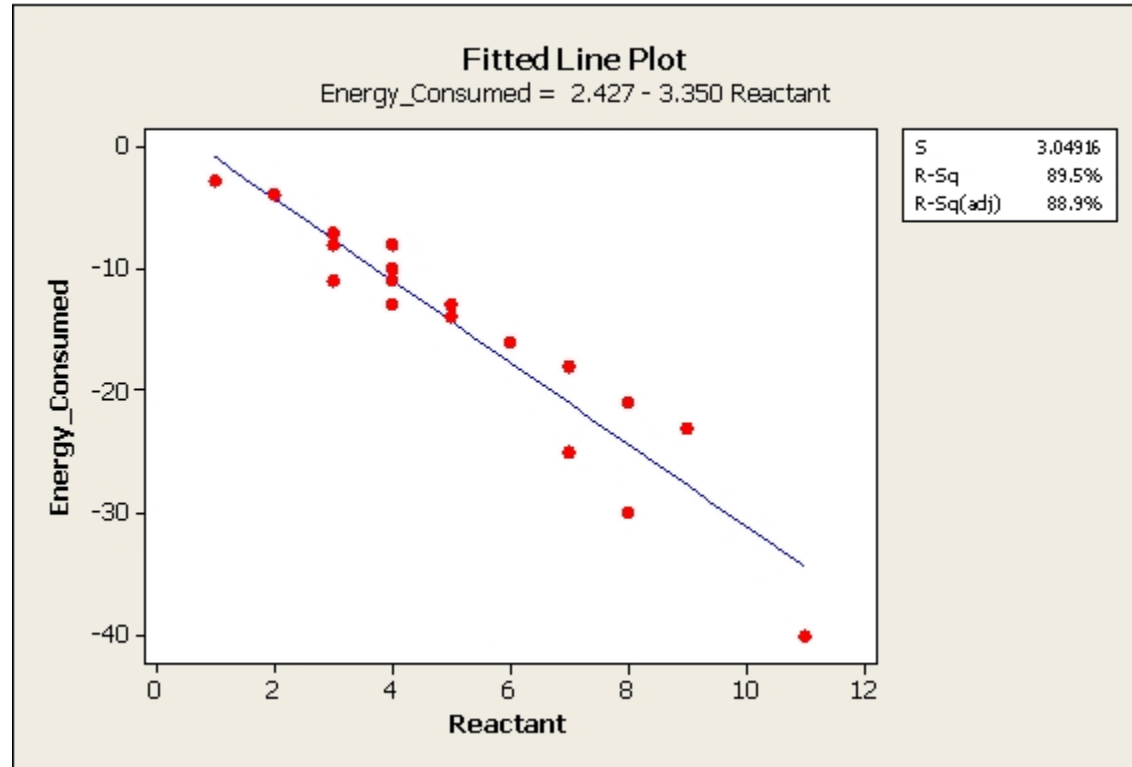
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- B. False

Correct Answer: A

Section:

QUESTION 51

Which statement(s) are true about the Fitted Line Plot shown here? (Note: There are 2 correct answers).



Vdumps

- A. When Reactant increases, the Energy Consumed increases.
- B. The slope of the equation is a positive 130.5.
- C. The predicted output Y is close to -18 when the Reactant level is set to 6.
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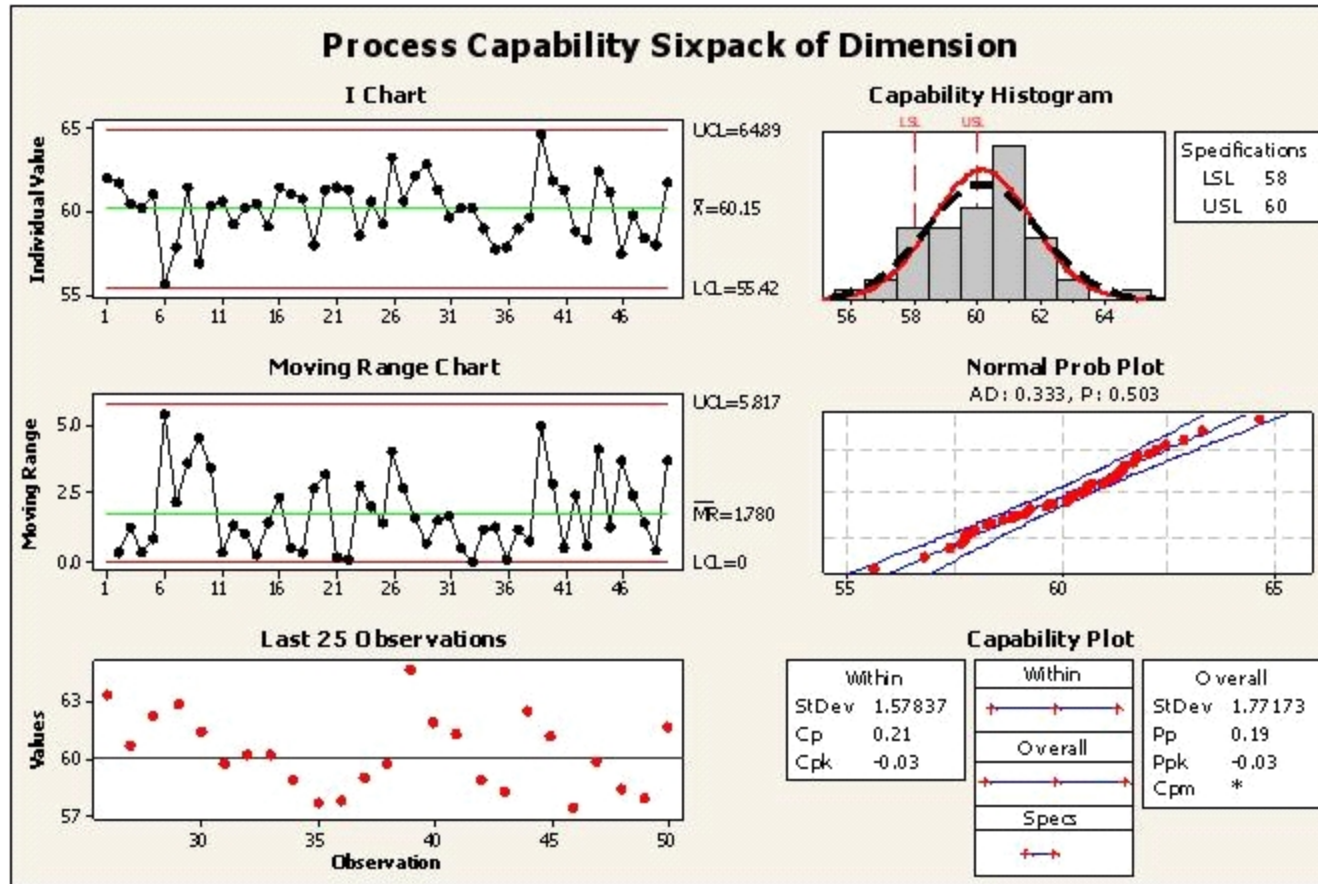
Correct Answer: C, D

Section:

QUESTION 52

Select all the statements that are true after reviewing the Capability Analysis shown here. (Note: There are 4 correct answers).





- A. The process is out of Control.
- B. The process is properly assumed to be a Normal process.
- C. The Mean of the process moving range is 1.78.
- D. This Capability Analysis used subgroups.
- E. Majority of the dimensional values are outside of the tolerance than within.

**Correct Answer: B, C, D, E**

**Section:**

**QUESTION 53**

When a Belt is analyzing sample data she should keep in mind that 95% of Normally Distributed data is within +/- 2 Standard Deviations from the Mean.

- A. True
- B. False

**Correct Answer: A**

**Section:**

**QUESTION 54**

The Standard Deviation for the distribution of Means is called the \_\_\_\_\_ and approaches zero as the sample size reaches 30.

- A. Standard Error
- B. Mean Deviation
- C. Mean Spread



D. Mean Error

**Correct Answer: A**

**Section:**

**QUESTION 55**

Due to excessive pollution, GREEN Solutions Inc. is considering subsidizing public transportation to work for its employees. According to the manager it takes an average weekday commute of 39 minutes with a Standard Deviation of 7 minutes for the employees to get to work while they use their personal vehicles for their office commute while the management set a policy of not more than 40 minutes for their daily one-way commute. A survey conducted one day on 70 employees showed an average of 34 minutes commuting time using the metro public transportation system with a Standard Deviation of 21 minutes. Assuming a Normal Distribution for the commute times by either personal or public transportation, which of these is true?

- A. The probability that they would arrive on time using personal vehicles is much higher than using the metro public transportation system (MPTS)
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- C. The two probabilities are about the same excepting in one case the consistency is higher than the other
- D. We need to compile more data around weekends to incorporate for traffic differences
- E. When Standard Deviation is higher the probability goes down and so the MPTS is worse

**Correct Answer: B**

**Section:**

**QUESTION 56**

According to a manager it takes an average weekday commute of 39 minutes with a Standard Deviation of 7 minutes for the employees to get to work when they use their personal vehicles for their office commute while management set a policy of not more than 40 minutes for their daily one-way commute. A survey conducted one day on 70 employees showed an average of 34 minutes commuting time using the metro public transportation system with a Standard Deviation of 21 minutes. For the employees choosing to increase their chances to come on time using personal transportation their variation should be reduced to \_\_\_\_\_?

- A. 1 minute
- B. 6 minutes
- C. 3.5 minutes
- D. Eliminate it to 0.0 minutes

**Correct Answer: C**

**Section:**

**QUESTION 57**

According to a manager it takes an average weekday commute of 39 minutes with a Standard Deviation of 7 minutes for the employees to get to work while they use their personal vehicles for their office commute while the management set a policy of not more than 40 minutes for their daily one-way commute. A survey conducted one day on 70 employees showed an average of 34 minutes commuting time using the metro public transportation system with a Standard Deviation of 21 minutes. If the Standard Deviation is uncontrollable then the other option to increase the probability of coming in on time via personal vehicles to work could be \_\_\_\_\_?

- A. Increase the average time of commute
- B. Maintain the average time of commute and change route to work
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- D. Change policy at work and request for flexible times based on location

**Correct Answer: C**

**Section:**

**QUESTION 58**

Which of the following is used to test the significance for the analysis of a Variance Table?

- A. t Test
- B. F Test
- C. Chi Square Test
- D. Acid Test

**Correct Answer: B**

**Section:**

**QUESTION 59**

Non-parametric testing is done when which of these are applicable? (Note: There are 3 correct answers).

- A. When the traditional t tests don't produce the results we need
- B. A Hypothesis Test for the Median of the population is in question
- C. It does not require data to come from Normally Distributed populations
- D. They look at the Median rather than the Mean of populations
- E. When there are no parameters to measure in the process

**Correct Answer: B, C, D**

**Section:**

**QUESTION 60**

The Mann-Whitney Test is used to test if the Means for two samples are different.

- A. True
- B. False

**Correct Answer: B**

**Section:**

**QUESTION 61**

Contingency Tables are used to do which of these? (Note: There are 2 correct answers).

- A. Illustrate one-tail proportions.
- B. Compare more than two sample proportions with each other.
- C. Contrast the Outliers under the tail.
- D. Analyze the 'what if' scenario.
- E. Applicable to data that is Attribute in nature

**Correct Answer: B, E**

**Section:**

**QUESTION 62**

For the data shown here a Belt suspects the three grades are supplying the same results.



Grade A	Grade B	Grade C
0.917	1.1	0.63
0.68	0.173	4.17
1.74	0.24	0.6
0.3	0.67	0.84
0.33	6.94	0.22
4.13		

Which statement(s) are true for proper Hypothesis Testing?

- A. The most appropriate Central Tendency to test is the Means
- B. An appropriate test to test Central Tendency is the Levene's test
- C. An appropriate test to test Central Tendency is the ANOVA test
- D. An appropriate test to test Central Tendency is the Mood's Median test

**Correct Answer: D**

**Section:**

**QUESTION 63**

The higher the sigma level of a process the better the performance.

- A. True
- B. False

**Correct Answer: A**

**Section:**

**QUESTION 64**

The Six Sigma methodology had its origins at \_\_\_\_\_ in the late 1980's when William Smith coined the name for quality related work being done there.

- A. Motorola
- B. Allied Signal
- C. General Electric
- D. Honeywell

**Correct Answer: A**

**Section:**

**QUESTION 65**

Training cost is \$4,000 and a project required an initial investment of \$30,000. If the project yields monthly savings of \$2,000 beginning after 3 months, what is the payback period in months (before money costs and taxes)?

- A. 10



- B. 20
- C. 27
- D. 33

**Correct Answer: B**

**Section:**

**QUESTION 66**

Lean Six Sigma's general approach to solving significant challenges related to a process is called \_\_\_\_\_.

- A. DOE
- B. SIPOC
- C. DMAIC
- D. FMEA

**Correct Answer: C**

**Section:**

**QUESTION 67**

Voice of the Customer is a Lean Six Sigma technique to determine \_\_\_\_\_ attributes of a product or service.

- A. At least 6
- B. The profitable
- C. Critical-to-Quality
- D. The majority of the

**Correct Answer: C**

**Section:**

**QUESTION 68**

Those who are trained to the skill levels of a Black Belt are typically utilized to apply Lean Six Sigma methodologies what percentage of their time?

- A. 25%
- B. 50%
- C. 75%
- D. 100%

**Correct Answer: D**

**Section:**

**QUESTION 69**

A process can be defined as a repetitive and systematic series of steps or activities where inputs are modified or assembled to achieve a customer desired result.

- A. True
- B. False

**Correct Answer: A**



**Section:**

**QUESTION 70**

Customers make a purchase decision based on a number of factors. In Lean Six Sigma we refer to these decision points as CTQ's or as \_\_\_\_\_.

- A. Critical-to-quality
- B. Conscious thought qualities
- C. Conspicuous time quandaries
- D. Cost of the quantity

**Correct Answer: A**

**Section:**

**QUESTION 71**

Cost of Poor Quality (COPQ) can be classified as Tangible (Visible) Costs and Hidden Costs.

- A. True
- B. False

**Correct Answer: A**

**Section:**

**QUESTION 72**

An employee of ACME Corporation noticed that every loan application that gets approved is copied four times and is stored in different locations in the company for no apparent reason. This would be an example of \_\_\_\_\_.

- A. Internal Failure Costs
- B. Appraisal Costs
- C. External Failure Costs
- D. Prevention Costs

**Correct Answer: A**

**Section:**

**QUESTION 73**

The 80:20 rule is associated with which of these tools?

- A. Pareto Chart
- B. Simon's Cross-Functional Tool
- C. SIPOC
- D. Framing Tool

**Correct Answer: A**

**Section:**

**QUESTION 74**

One of the metrics commonly used in Lean Six Sigma is DPU. This acronym stands for \_\_\_\_\_.

- A. Deferred planned usage
- B. Defects per unit
- C. Decreased production utilization
- D. Downtime per unit

**Correct Answer: B**

**Section:**

**QUESTION 75**

According to the definition of Rolled Throughput Yield which of these items best describe the purpose of RTY?

- A. A function of  $Y=f(x)$
- B. Accounts for losses due to rework and scrap
- C. Isolates the increase throughput
- D. Determines incremental Growth

**Correct Answer: B**

**Section:**

**QUESTION 76**

What is the Cycle Time, in seconds, for a process having a Throughput of 7,200 units per hour?

- A. 0.5
- B. 2
- C. 4
- D. 10



**Correct Answer: A**

**Section:**

**QUESTION 77**

The following Business Case is constructed properly.

"In business unit A there are too many flashlight returns and flashlight sales have decreased by 25 percent."

- A. True
- B. False

**Correct Answer: B**

**Section:**

**QUESTION 78**

To create standardization of financial benefit calculations project savings are typically based on savings over what period of time?

- A. 6 months
- B. 12 months
- C. 24 months

- D. The remainder of the calendar year
- E. The remainder of the fiscal year

**Correct Answer: B**

**Section:**

**QUESTION 79**

The essence of Lean is to concentrate effort on removing waste while improving process flow to achieve speed and agility at lower cost.

- A. True
- B. False

**Correct Answer: A**

**Section:**

**QUESTION 80**

Lean had its origins in the development and practice of the \_\_\_\_\_ Production System.

- A. Honda
- B. Toyota
- C. Ford
- D. Motorola

**Correct Answer: B**

**Section:**



**QUESTION 81**

Lean removes many forms of \_\_\_\_\_ so Six Sigma can focus on reducing \_\_\_\_\_.

- A. Waste, variability
- B. Inventory, defects
- C. Waste, cost
- D. Movement, variation

**Correct Answer: A**

**Section:**

**QUESTION 82**

Which element of waste best describes 'the unnecessary movement of materials and/or goods'?

- A. Overprocessing
- B. Motion
- C. Conveyance
- D. Correction

**Correct Answer: C**

**Section:**



**QUESTION 83**

Which element of waste best describes 'the cost of an idle resource'?

- A. Waiting
- B. Motion
- C. Inventory
- D. Correction

**Correct Answer: A**

**Section:**

**QUESTION 84**

The proper functioning of a Visual Factory is dependent upon which of these?

- A. Technically skilled workers
- B. Work space with active 5S
- C. Availability of visual tools
- D. Breakthrough projects

**Correct Answer: C**

**Section:**

**QUESTION 85**

Lean focuses on the sequence of activities and work required to produce a product or a service. This flow is called a \_\_\_\_\_.

- A. Value-add Flow
- B. Production Map
- C. Value Stream
- D. Operating Procedure

**Correct Answer: C**

**Section:**

**QUESTION 86**

Lean Enterprise is based on the premise that anywhere work is being done which of these is also occurring?

- A. Money is being spent
- B. Waste is being generated
- C. People are producing value added product
- D. Waste is being eliminated

**Correct Answer: B**

**Section:**

**QUESTION 87**

As a type of measurement error, Linearity describes a change in accuracy through the expected operating range of the measurement instrument.

- A. True
- B. False

**Correct Answer: A**

**Section:**

**QUESTION 88**

The deviation of the measured value from the actual value is known as \_\_\_\_\_.

- A. Bias
- B. Linearity
- C. Repeatability
- D. Movement

**Correct Answer: A**

**Section:**

**QUESTION 89**

The ability to repeat the same measurement obtained with one measurement instrument used several times by one appraiser while measuring the identical characteristic on the same part is known as \_\_\_\_\_.

- A. Repeatability
- B. Bias
- C. Linearity
- D. Reproducibility

**Correct Answer: A**

**Section:**

**QUESTION 90**

Process Capability is a function of which of these?

- A. Customer requirements
- B. Process performance
- C. Output over time
- D. All of these answers are correct

**Correct Answer: D**

**Section:**

**QUESTION 91**

Which of these are correct if Cpk Upper is 2.0 and Cpk Lower is 1.0?

- A. The process is not stable.
- B. The process is shifted to the left.
- C. Cpk must be reported as 1.0.
- D. The process Mean is 1.5.



Correct Answer: C

Section:

QUESTION 92

A Stable process is a process whose output is consistent over time. A primary tool used to analyze Stability would be a \_\_\_\_\_.

- A. Data Forward Plot
- B. Bag Plot
- C. Min/Max Plot
- D. Time Series Plot

Correct Answer: D

Section:

QUESTION 93

Conducting a viable Capability Analysis using Attribute Data one must obtain a fairly large sample set to be statistically sound.

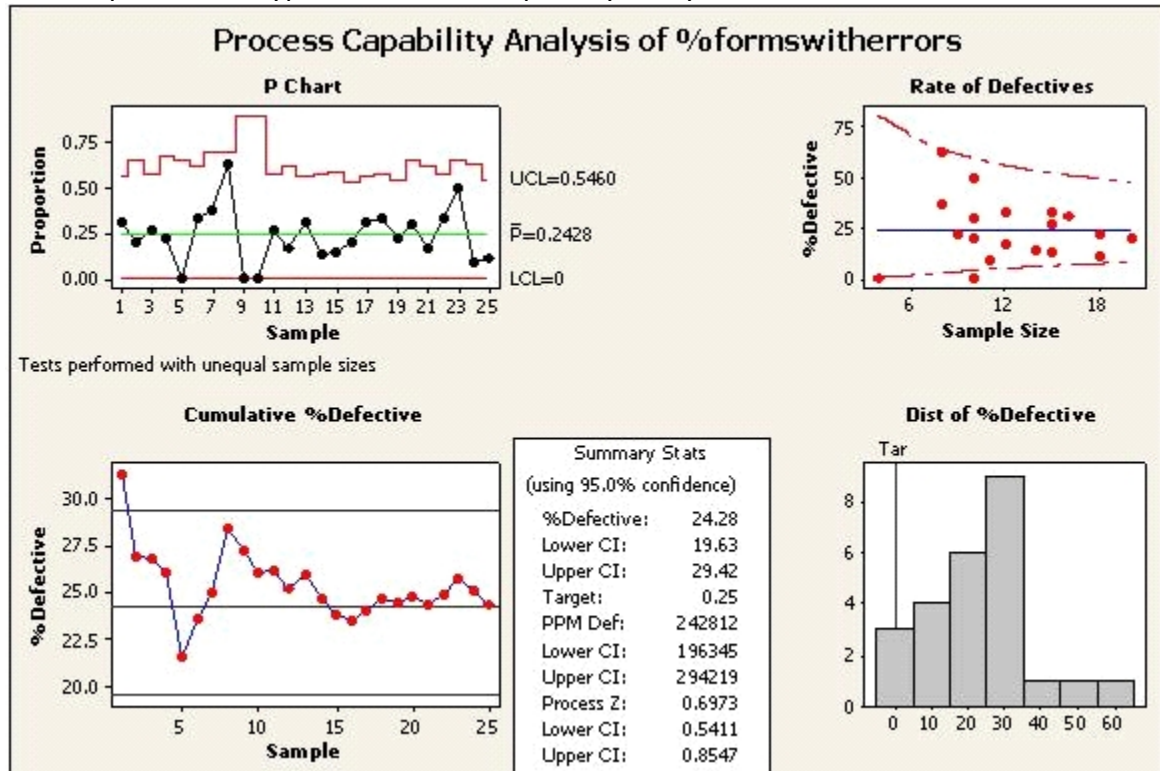
- A. True
- B. False

Correct Answer: A

Section:

QUESTION 94

This output is what type of advanced Capability Analysis?



- A. Continuous
- B. Binomial

- C. Poisson
- D. Discreet
- E. DPU

**Correct Answer: B**

**Section:**

**QUESTION 95**

Fractional Factorial designs for an experimental approach are used when \_\_\_\_\_ about the multiple metric interaction in a process.

- A. Much is known
- B. Little is known
- C. We don't care
- D. Data exists

**Correct Answer: B**

**Section:**

**QUESTION 96**

Some of the approaches used in Lean include station warning lights, tool boards and jidohka devices in order that which of these apply?

- A. Workers do not utilize individual methods of cleaning
- B. Problems are made highly visible
- C. Work stoppages are documented properly
- D. Lessen the amount of employee pilferage

**Correct Answer: B**

**Section:**

**QUESTION 97**

Examples of a Visual Factory include which of these? (Note: There are 2 correct answers).

- A. White outlines on floor for proper inventory placement
- B. Documented procedures with a numerical outline
- C. Bad/Good indications of gauge readings with red and green outlines
- D. Implementing a defect inspection device

**Correct Answer: A, C**

**Section:**

**QUESTION 98**

Standardized work instructions apply to which resource in the process of interest?

- A. People
- B. Machines
- C. Supervision
- D. Engineering



**Correct Answer: A**

**Section:**

**QUESTION 99**

While management of a company must set the stage for all improvement efforts, which of these 5S's is primarily driven by management?

- A. Straighten
- B. Sort
- C. Shine
- D. Sustain

**Correct Answer: D**

**Section:**

**QUESTION 100**

As part of a Visual Factory plan Kanban cards are created and utilized to identify areas in need of cleaning and organization.

- A. True
- B. False

**Correct Answer: B**

**Section:**

**QUESTION 101**

Kanbans work best with pull systems for determining the timing of which products or services are produced.

- A. True
- B. False

**Correct Answer: A**

**Section:**

**QUESTION 102**

The practice of utilizing Poka-Yoke is also known as \_\_\_\_\_.

- A. Thorough integration
- B. Mistake proofing
- C. On site inspection
- D. Lean controls

**Correct Answer: B**

**Section:**

**QUESTION 103**

Examples of Mistake Proofing for a laptop computer include which of these? (Note: There are 2 correct answers).

- A. USB connection for a mouse



- B. Open/Close button for CD Drive
- C. Battery alignment pins
- D. On/Off switch for computer

**Correct Answer: A, C**

**Section:**

**QUESTION 104**

Significant variation in process performance is a consequence of several causes that can be classified using terminologies shown here. (Note: There are 2 correct answers).

- A. Common
- B. Random
- C. Uneducated
- D. Special
- E. Vital

**Correct Answer: A, D**

**Section:**

**QUESTION 105**

The reason(s) for not marking the customer Specification Limits (SL) on a Control Chart is which of these? (Note: There are 4 correct answers).

- A. Process control teams should not control a process based on SLs
- B. Displaying the SLs on a Control Chart sends a wrong signal toward process control
- C. Marking the SLs on a Control Chart is against the principle of charting
- D. By marking the SLs, one can confuse the operator as to what limits are critical
- E. By using mere Control Limits the process only needs to be in Statistical Control



**Correct Answer: A, B, D, E**

**Section:**

**QUESTION 106**

A periodic time frame can be used to arrange for Control Limit and Center Line calculations with good SPC implementation in a process.

- A. True
- B. False

**Correct Answer: A**

**Section:**

**QUESTION 107**

SPC charts typically have the most recent data point on the right hand side.

- A. True
- B. False

**Correct Answer: A**

**Section:**

**QUESTION 108**

Which of these statements describe an undesirable situation when implementing SPC? (Note: There are 2 correct answers).

- A. The lower Control Limit for the R chart is equal to zero
- B. The Control Limits are wider than the customer specification limits
- C. A process is in Statistical Control before implementation of SPC
- D. Attempt to use SPC for tracking transaction times at a warehouse
- E. Indication of the specification limits on the Control Chart

**Correct Answer: B, E**

**Section:**

**QUESTION 109**

If a process has Outliers which pair of charts is most preferable if subgroups will exist for the Continuous Data?

- A. Individual-Moving Range
- B. Xbar-R Charts
- C. Xbar-S Charts
- D. nP and P Charts

**Correct Answer: B**

**Section:**

**QUESTION 110**

After a Belt has put data through the smoothing process which chart would be used to look for trends in the data?

- A. Moving Average Chart
- B. Multi-Vari Chart
- C. X bar Chart
- D. Pareto Chart

**Correct Answer: A**

**Section:**

