IASSC Lean Six Sigma Green Belt Certification

Sample Paper

PEOPLECERT

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IASSC LEAN SIX SIGMA CERTIFICATION EXAM

SAMPLE PAPER – GREEN BELT

Sample Test Questions *(Select all applicable answers)*

Phase 1 - Define Phase

1. A shoe manufacturing firm learned through a Lean Six Sigma project their boot soles could be made of a different material requiring two less steps in the process. Removal of these two steps yielded a monthly cost savings of $7,500. Therefore the reported financial savings for this LSS project were _____.

   a. $45,000

   b. $75,000

   c. $90,000

   d. $120,000

2. A Belt utilized a diamond symbol in a Process Map she created for the process that was subject to her LSS project. By use of the diamond symbol she was showing a(n) _____ point in the process.

   a. Ending

   b. Beginning

   c. Decision

   d. Repair station

3. When in the process of trying to identify the Critical X's for a LSS project a Belt creates a(n) _____ because frequently it is 20% of the inputs that have an 80% impact on the output.

   a. Pareto Chart

   b. FMEA

   c. Np Chart

   d. X-Y Diagram

Phase 2 - Measure Phase

1. When a Belt is developing a Macro Process Map to define a complex process he will frequently include activities across various department to capture all the appropriate activity. He will use _____ to show which department is responsible for which steps in the process.

   a. Subscripts

   b. Superscripts

   c. Swim Lanes

   d. Fence Posts

2. This formula is used to calculate a Z score that, with the appropriate table, can tell a Belt what _____.

$$Z = \frac{X - \mu}{\sigma}$$

   a. Ratio the area under the curve is to the total population

   b. Number of Standard Deviations are between X and μ

   c. The Median of the sample population is

   d. Proportion of the data is between X and μ

3. As we calibrate our Measurement System to assure accurate data we frequently encounter Bias which is the _____ of a measured value from the _____ value.

   a. Spread, Mean of the population

   b. Deviation, hoped for

   c. Deviation, true

   d. Spread, idea

Phase 3 - Analyze Phase

1. In an "X" Sifting exercises a Belt will use a(n) _____ to assist in isolating families of variation that may exist within a subgroup, between subgroups or vary over time..

   a. Multi-Vari Chart

   b. Pareto Chart

   c. FMEA

   d. Shewhart Analysis

2. When analyzing sample data a Belt may experience a Bimodal Distribution with each mode displaying Normal Distribution. This could be caused by _____ .

   a. Two different machines being read

   b. Two operators on different shifts

   c. Two suppliers parts being used

   d. All these are correct answers

3. A battery manufacturer was considering changing suppliers for a particular part. The purchasing manager required that the average cost of the part be less than or equal to $32 in order to stay within budget. A sample of the 32 initial deliveries had a Mean of the new product upgrade price of $28 with an estimated Standard Deviation of $3. Based on the data provided, the Z value for the data assuming a Normal Distribution is?

   a. 0.67

   b. 1.33

   c. 2.67

   d. 4.33

Phase 4 - Improve Phase

1. When conducting Hypothesis Analysis a Belt must use the formula shown to determine if a certain value is between – 1 and + 1 which will lead to a conclusion relative to the hypothesis. The value calculated by this formula is the _____ .

$$r = \frac{\sum (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum (x_i - \bar{x})^2 \sum (y_i - \bar{y})^2}}$$

a. Proportion of +/- 2 Standard Deviations to the total

b. Spread of the hypothesis data

c. Population Correlation Coefficient

d. Sample Correlation Coefficient

2. When doing a graphical analysis of DOE results a Belt frequently uses the Main Effects Plot. To determine the relative impact of a variety of inputs on the output of interest it is easy to identify the most impactful input because the slope of the line on the Main Effects Plot is _____.

a. The steepest

b. Negatively correlated

c. Positively correlated

d. The shallowest

3. A _____ is used to create a model of the affect on an output by the variation in two or more of the inputs.

a. Correlation Coefficient

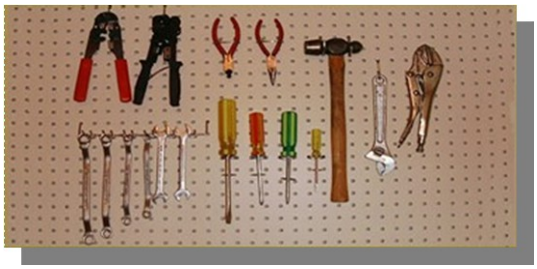
b. Linear Regression

c. Multiple Regression

d. X-Y Diagram

Phase 5 - Control Phase

1. A Belt has used the 5S approach of Lean to set up a control method with frequently used tools organized as shown in this graphic. The Belt has applied the _____ principle of 5S.



   a. Shining

   b. Sorting

   c. Straightening

   d. Sustaining

2. In the Control Phase of a LSS project a Belt will identify key metrics that can be monitored and analyzed to give an indication that a process may be moving towards an out of spec condition. When he applies this approach he is using _____.

   a. Poisson Derivatives

   b. Inferential Statistics

   c. Kanban Analysis

   d. Statistical Process Control

3. As a Belt completes a LSS project she creates for the Process Owner a Control Plan. The _____ portion of the Control Plan details the actions to be taken when the KPI's indicate they may be moving outside acceptable limits.

   a. Visual Factory

   b. Response Plan

   c. Readjustment Plan

   d. Variance Tracking

SAMPLE TEST QUESTIONS ANSWER KEY

Phase 1 - Define Phase

1. **C** **$90,000**
2. **C** **Decision**
3. **A** **Pareto Chart**

Phase 2 -Measure Phase

1. C Swim Lanes
2. D Proportion of the data is between X and μ
3. C Deviation, true

Phase 3 - Analyze Phase

1. A Multi-Vari Chart
2. D All these are correct answers
3. B 1.33

Phase 4 - Improve Phase

1. D Sample Correlation Coefficient
2. A The steepest
3. C Multiple Regression

Phase 5 - Control Phase

1. C Straightening
2. D Statistical Process Control
3. B Response Plan

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