Six Sigma Certification Exam Questions with Answers

(Based on ASQ Black Belt BOK DMAIC sections)

IMPROVE

1) If asked at a six sigma certification exam, every lean six sigma black belt candidate will correctly identify that the following is <u>NOT</u> a step in the waste elimination technique 5S:

    a) Sort
    b) Shine
    c) Sustain
    d) Support

There is no such step as support. The five steps in the 5S methodology are: sort, set in order, shine, standardize and sustain.

2) A six sigma team is conducting a full factorial design of experiments (DOE) with three factors, two levels and two replicates. How many runs will there be?

    a) 24
    b) 18
    c) 8
    d) 36

The formula for number of runs for full factorial experiments is $n=L^F$ where n= number of runs, L=number of levels and F=number of factors. In this example n for an experiment without replicates is 2^3=8. Because there are 2 replicates, the whole experiment is repeated 2 more times. Overall: 3 times (1st experiment run + 2 replicates). Therefore, (2^3) x 3 = 24.

3) A(n) _____ _____ is the impact or influence of a single factor on the mean of the response variable.

    a) Main effect
    b) Interaction effect
    c) Blocking effect
    d) Singular effect

Only "main effects" is correct. An interaction effect occurs when the influence of one factor on the response variable depends on one or more other factors. Blocking refers to homogeneity of experimental units. Singular effect is non-existent in the DOE context.

4) A business process improvement six sigma team is performing SWOT analysis to identify strengths and weaknesses along with two other categories. What are these two categories?

    a) Opportunities and threats
    b) Obstacles and tasks
    c) Opportunities and themes
    d) Obstacles and tasks

SWOT analysis stands for strengths, weaknesses, opportunities and threats. Opportunities and threats are the remaining categories.

5) _____ is a Japanese word and refers to a mind-set in which all employees are responsible for making continuous incremental improvements to the functions that they perform.

    a) Kanban
    b) Seiri
    c) Kaizen
    d) Muda

Kaizen is a term which was made popular by Masaaki Imai in his book "Kaizen: The Key to Japan's Competitive Success". It refers to continuous improvement performed by all employees.