

# DUMPS ARENA

## Lean Six Sigma Black Belt

Six Sigma LSSBB

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**QUESTION NO: 1**

If an experiment has 5 factors and no replicates for a 2-level Experimental Design with 16 experimental runs which statement is incorrect?

- A. The Experimental Design is half-fractional
- B. The Main Effects are confounded with only 4-way interactions
- C. The Main Effects for the 5 factors are not aliased or confounded but the 2-way interactions are confounded with the 3-way interactions
- D. The experiment has 8 experimental runs with the first factor at the high level

**ANSWER: C****QUESTION NO: 2**

The Mann-Whitney test is a powerful test and is unique to situations from which of the choices listed? (Note: There are 2 correct answers).

- A. Testing the identity of two populations
- B. Focuses on equality of the Median of the two populations
- C. Less powerful than the traditional "t-test"
- D. More widely applicable than the traditional "t-test"

**ANSWER: B D****QUESTION NO: 3**

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

**Regression Analysis: Turbine Output versus Air-Fuel Ratio, % steam, ...**

The Regression Equation is

$$\text{TurbineOutput} = 16.5 + 3.21 \text{ Air-Fuel Ratio} + 0.386 \% \text{ methane} + 0.0166 \text{ SteamExitTemp}$$

Predictor	Coef	SE Coef	T	P
Constant	16.488	2.918	5.65	0.000
Air-Fuel Ratio	3.2148	0.2377	13.52	0.000
% methane	0.38637	0.07278	5.31	0.000
SteamExitTemp	0.016576	0.004273	3.88	0.004

S = 0.508616 R-Sq = 98.6% R-Sq(adj) = 98.2%

## Analysis of Variance

Source	DF	SS	MS	F	P
Regression	3	170.003	56.668	219.06	0.000
Residual Error	9	2.328	0.259		
Total	12	172.331			

Source	DF	Seq SS
Air-Fuel Ratio	1	159.048
% methane	1	7.062
SteamExitTemp	1	3.892

- A. The air-fuel ratio explains most of the TurbineOutput variation
- B. The Regression explains over 98% of the process variation
- C. This Multiple Linear Regression has three statistically significant independent variables
- D. If the air-fuel ratio increases by 1, the TurbineOutput more than triples
- E. The SteamExitTemp explains the most variation of the TurbineOutput

**ANSWER: D E****QUESTION NO: 4**

If an experiment has 5 factors and no replicates for a 2-level Experimental Design with 16 experimental runs which statement(s) are correct? (Note: There are 3 correct answers).

- A. The Main Effects for the 5 factors are not aliased or confounded but the 2-way interactions are confounded with the 3-way interactions
- B. The Main Effects are confounded with only 4-way interactions
- C. The Experimental Design is half-fractional
- D. The experiment has 8 experimental runs with the first factor at the high level
- E. The experiment has only 4 experimental runs with the 5th factor at the high level

**ANSWER: B C D**

**QUESTION NO: 5**

What is the Ppk of a process with a spread of 24 units, an average of 68, an upper limit of 82 and a lower limit of 54?

- A. 1.68
- B. 2.00
- C. 4.00
- D. 4.42

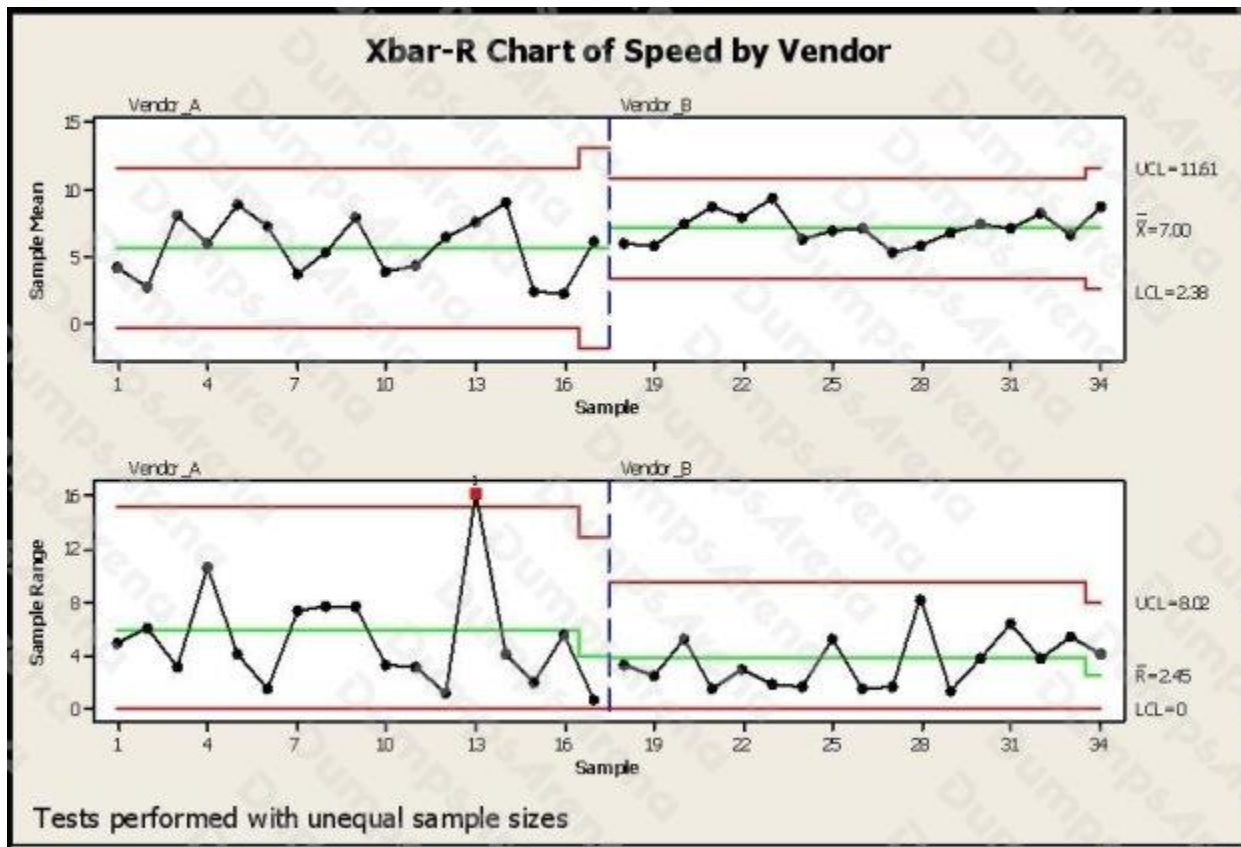
**ANSWER: C****QUESTION NO: 6**

From this list select the items that define what an X-Y Diagram is. (Note: There are 4 correct answers).

- A. Created for every project
- B. Based on team's collective opinions
- C. Updated whenever a parameter is changed
- D. Used to show each step in a process
- E. A living document throughout project lifecycle

**ANSWER: A B C E****QUESTION NO: 7**

SPC Charts are used extensively in different business and decision-making environments. In this example a vendor is being selected based on speed of delivery. Which of the conclusions would help you pick a vendor for your needs regarding lead-time of delivery from your vendors? (Note: There are 4 correct answers).



- A. Vendor A with a much shorter lead time in delivery
- B. Vendor B as it has a better consistency (lower variance) on lead time
- C. Vendor B since Vendor A shows a situation out of control as shown in red
- D. Vendor B since the Control Limits are much narrower than Vendor A
- E. Vendor B has higher lead time, but a process with much narrower Control Limits

**ANSWER: B C D E**

#### QUESTION NO: 8

Statistical Difference is the magnitude of difference or change required to distinguish between a true difference, brought about by change or improvement, and one that could have occurred by chance.

- A. True
- B. False

**ANSWER: A**

**QUESTION NO: 9**

One of the methods of testing a Measurement System is to have at least two people take multiple readings from the same instrument and of the same sample set to judge the Repeatability and Reproducibility. This approach is called a \_\_\_\_\_ study.

- A. Correlation Analysis
- B. Gage R & R
- C. Bimodal
- D. Dual Attribute

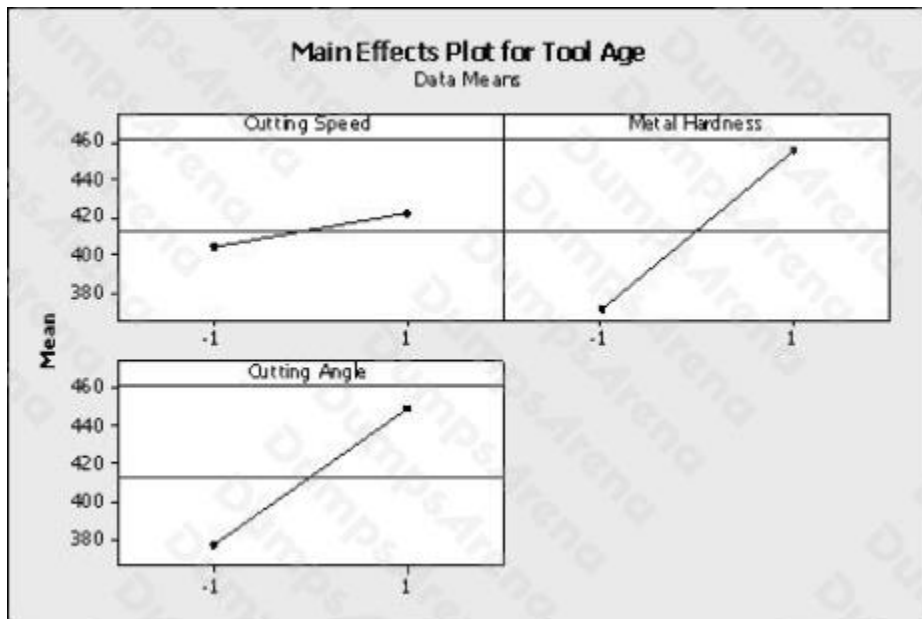
**ANSWER: B****QUESTION NO: 10**

Special Cause Variation falls into which two categories? (Note: There are 2 correct answers).

- A. Natural
- B. Short term
- C. Assignable
- D. Pattern

**ANSWER: C D****QUESTION NO: 11**

Which statement(s) are correct about the DOE Factorial plot output here? (Note: There are 3 correct answers).



- A. Two factors were operated at 3 levels each
- B. The highest tool age was achieved with metal hardness at high level while keeping the cutting speed at the low level
- C. The design indicated above is a 32 factorial design
- D. The cutting speed and cutting angle are at the low level for the least tool age achieved
- E. All factors had 2 levels in the experiment

**ANSWER: B C E**

#### QUESTION NO: 12

A \_\_\_\_\_ is used primarily to track the stability of the average value of a metric of interest.

- A. NP Chart
- B. Xbar-R Chart
- C. I-MR Chart
- D. C Chart

**ANSWER: B**

#### QUESTION NO: 13

A statistical test or Hypothesis Test is performed to reject or fail to reject a stated hypothesis and it converts the Practical Problem into a Statistical Problem.

- A. True
- B. False

**ANSWER: A**

**QUESTION NO: 14**

For a Kanban to be successful which of these must occur?

- A. Consistent cycle times
- B. Fairly stable process demand of product or service
- C. Low defect rate of incoming product or service
- D. All of the above

**ANSWER: D**

**QUESTION NO: 15**

A Personal Trainer was assessing her workout class participants for their body fat content and had to include data for her analysis. One of the columns listed the range of weight of the people included in the studies. This required plotting a Histogram of the weight of the people assessed for their body fat content. While drawing the Histogram the x-axis contained a certain scale of data. Pick the scale of data that is appropriate for Histograms.

- A. Ordinal Scale Data
- B. Ration Scale Data
- C. Nominal Scale Data
- D. Interval Scale Data

**ANSWER: D**