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Courses » Six Sigma

Announcements

Course

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Unit 8 - Week 7

Course outline

How to access the portal

Week 1

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Week 7

Lecture 23: Control Charts by Excel

Lecture 24: Process Capability

Lecture 25: Quality Function Deployment

Feedback for week 7

Quiz : Week 7: Assignment (Jan 2018)

Week 7: Assignment Solution (Jan 2018)

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Week 7: Assignment (Jan 2018)

The due date for submitting this assignment has passed. **Due on 2018-03-18, 23:59 IST**
As per our records you have not submitted this assignment.

1. Total No. of Questions: 15. Each question carries one point.
2. All questions are objective type. In some of the questions, more than one answers are correct.
3. This assignment includes true/false statement questions.

1) What are the control limits of p-chart for the following data of 20 samples of 100 pairs of jeans? **1 point**

Sample	Number of defectives	Proportion Defectives
1	6	0.06
2	4	0.04
3	2	0.02
.	.	.
.	.	.
20	12	0.12
Total	180	

- UCL = 0.1286 and LCL = 0.0624
- UCL = 0.1186 and LCL = 0.0614
- UCL = 0.0911 and LCL = 0.0866
- None of these

No, the answer is incorrect.

Score: 0

Accepted Answers:

None of these

2) A hospital manager receives a certain number of complaints each day about the hospitals service. Complaints for 15 days are given in the table shown. What are the control limits when one will construct a control chart using three sigma limits? **1 point**



- UCL and LCL are $5 \pm 3\sqrt{5}$
- UCL = 0 and LCL = -1.708
- UCL = 11.708 and LCL = 0
- None of these

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No, the answer is incorrect.

Score: 0

Accepted Answers:

UCL = 11.708 and LCL = 0

3) The following data is a common data given for x-bar and range chart calculations in question 1 point number 3 and 4.

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
	17.5	16.3	13.8	16.7	14.1
	15.3	18.4	17.2	11.3	12.5
	12.7	14.9	15.6	14.4	18.8
x-bar	15.16	16.53	15.53	14.13	15.13
R	4.8	3.5	3.4	5.4	6.3

Sample Size = m	A ₂	A ₃	d ₂	D ₃	D ₄	B ₃	B ₄
2	1.880	2.659	1.128	0	3.267	0	3.267
3	1.023	1.954	1.693	0	2.574	0	2.568
4	0.729	1.625	2.059	0	2.282	0	2.266
5	0.577	1.427	2.326	0	2.114	0	2.089
6	0.483	1.287	2.534	0	2.004	0.030	1.970

What is the value of central line and UCL for Range chart?

- Central Line = 3.25 and UCL = 4.68
 Central Line = 5.24 and UCL = 12.756
 Central Line = 4.71 and UCL = 12.667
 Central Line = 4.68 and UCL = 12.046

No, the answer is incorrect.

Score: 0

Accepted Answers:

Central Line = 4.68 and UCL = 12.046

4) What will be the lower control limit for x-bar chart?

1 point

- 10.51
 20.084
 15.296
 None of these

No, the answer is incorrect.

Score: 0

Accepted Answers:

10.51

5) p Charts calculate the percent defective in a sample whereas c Charts counts number of defects in item.

1 point

- True
 False

No, the answer is incorrect.

Score: 0

Accepted Answers:

True

6) A _____ is an attributes control chart used with data collected in sub groups of varying size. Fill in the blank with appropriate option.

1 point

- C chart
 P chart

- U chart
- NP chart

No, the answer is incorrect.

Score: 0

Accepted Answers:

U chart

7) What is the importance of the capability analysis?

1 point

- Capability analysis determines whether the inherent variability of the process output fails within the acceptable range of the variability allowed by the design specifications for the process output.
- Capability analysis determines whether the invariability of the process output fails within the acceptable range of the variability allowed by the design specifications for the process output.
- Both of the above
- None of the above

No, the answer is incorrect.

Score: 0

Accepted Answers:

Capability analysis determines whether the inherent variability of the process output fails within the acceptable range of the variability allowed by the design specifications for the process output.

8) Process Capability Analysis differs fundamentally from control charting because

1 point

- It focuses on improvement not control
- It focuses on variable not attribute, data involved
- Capability study address range of individual outputs
- All of the above

No, the answer is incorrect.

Score: 0

Accepted Answers:

All of the above

9) For a process the upper specification limit is 18.5 and the lower specification limit is 12.5 with a standard deviation of 0.85. What will be the process capability ratio of the process for six sigma process? **1 point**

- 1.1658
- 1.1765
- 1.1754
- 1.1828

No, the answer is incorrect.

Score: 0

Accepted Answers:

1.1765

10) We are studying two processes for machining a part. Process A produces parts which have a mean length of 150 and a standard deviation of 3. Process B produces parts which have a mean length of 155 and standard deviation of 1. The design specifications for the part are 150 ± 10 . Data given is for $Z = -3.333$ area under the standard normal curve to the left of Z will be 0.00043. What will be the value of process capability ratio for process B and C_{pk} for process A? **1 point**

- 1.111 and 3.333 respectively
- 3.333 and 1.111 respectively
- 3.333 and 1.667 respectively
- None of these

No, the answer is incorrect.

Score: 0

Accepted Answers:

3.333 and 1.111 respectively

11) Which of the following statements are wrong?

1 point

- I. Natural variation exceeds design specifications: process is not capable of meeting specification all the time.
- II. Design specification and natural variations are same: process is capable of meeting specification most of the time.
- Only I
 - Only II
 - Both I and II
 - None of these

No, the answer is incorrect.

Score: 0

Accepted Answers:

None of these

12) What QFD (Quality Function Deployment) do?

1 point

- QFD develop and manufacture towards measured goals.
- QFD gives passive reaction to customer goals.
- QFD optimises products and processes.
- None of these

No, the answer is incorrect.

Score: 0

Accepted Answers:

QFD develop and manufacture towards measured goals.

QFD optimises products and processes.

13) Twenty samples of size 4 are taken from a stable process. The average means of the sample means is 42.5, and the average range of the samples is 1.5. What is the UCL for the R-chart?

1 point

- 0.00
- 3.1725
- 3.423
- 43.37

No, the answer is incorrect.

Score: 0

Accepted Answers:

3.423

14) What causes design to fail?

1 point

- Not enough basic knowledge at hand when a design project starts
- Too little activity in the beginning of the project
- Bad and/or non existing demand specifications
- All of these

No, the answer is incorrect.

Score: 0

Accepted Answers:

All of these

15) What is the roof of the house of quality in QFD indicates?

1 point

- Relationship Matrix
- Co-relationship Matrix
- Planning Matrix/ Customer Perception
- Target Specification

No, the answer is incorrect.

Score: 0

Accepted Answers:
Co-relationship Matrix

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