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?

<table>
<thead>
<tr>
<th>Sample</th>
<th>Number of defectives</th>
<th>Proportion Defectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6</td>
<td>0.06</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
<td>0.04</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>0.02</td>
</tr>
<tr>
<td>.</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td>20</td>
<td>12</td>
<td>0.12</td>
</tr>
<tr>
<td>Total</td>
<td>180</td>
<td></td>
</tr>
</tbody>
</table>

- 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 hospital's 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?

<table>
<thead>
<tr>
<th>Day</th>
<th>Complaints</th>
</tr>
</thead>
<tbody>
<tr>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td>15</td>
<td>.</td>
</tr>
<tr>
<td>Total</td>
<td>120</td>
</tr>
</tbody>
</table>

- UCL and LCL are $5 \pm 3 \sqrt{5}$
- UCL = 0 and LCL = -1.708
- UCL = 11.708 and LCL = 0
- None of these
3) The following data is a common data given for x-bar and range chart calculations in question 1 point number 3 and 4.

<table>
<thead>
<tr>
<th>Sample 1</th>
<th>Sample 2</th>
<th>Sample 3</th>
<th>Sample 4</th>
<th>Sample 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.5</td>
<td>16.3</td>
<td>13.8</td>
<td>16.7</td>
<td>14.1</td>
</tr>
<tr>
<td>15.3</td>
<td>18.4</td>
<td>17.2</td>
<td>11.3</td>
<td>12.5</td>
</tr>
<tr>
<td>12.7</td>
<td>14.9</td>
<td>15.6</td>
<td>14.4</td>
<td>18.8</td>
</tr>
<tr>
<td>x-bar</td>
<td>15.16</td>
<td>16.53</td>
<td>15.53</td>
<td>14.13</td>
</tr>
<tr>
<td>R</td>
<td>4.8</td>
<td>3.5</td>
<td>3.4</td>
<td>5.4</td>
</tr>
</tbody>
</table>

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 = 12.067
- 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?

- 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.

- 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.

- C chart
- P chart
7) What is the importance of the capability analysis?
- 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:
U chart

8) Process Capability Analysis differs fundamentally from control charting because
- 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?
- 1.1658
- 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?
- 1.111 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?  

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?

- 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?  

- 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?  

- 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?

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

No, the answer is incorrect.  
Score: 0