Thirty samples were collected; with variable sample sizes. A control chart for the fraction nonconforming is to be established with two-sigma control limits. The sum of nonconforming was 90 and the sum of the sample sizes = 180. Using the average sample size, the UCL is ----------.

○ 0.9082

◉ 1.1123

○ 6

○ 0.6476

○ None

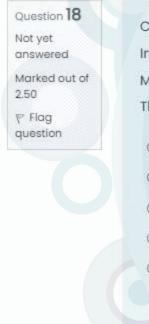Clear my choice

A control chart for the fraction nonconforming is to be established using a center line of 0.10 and four-sigma control limits. What sample size is required if we wish to detect a shift in the process fraction nonconforming to 0.30 with probability 0.50?

○ 100

◉ 36

○ None

○ 25

○ 9

Clear my choice

Question 3

Not yet
answered

Marked out of
2.50

Flag
question

The fraction nonconforming control chart was constructed ($n=100$). The UCL and CL are calculated as 0.19 and 0.1, respectively. Then, the LCL is -----------

- ⦿ 0.01
- ○ -0.01
- ○ 0.09
- ○ 0.07
- ○ None

Clear my choice

Question 12

Not yet
answered

Marked out of
2.50

Flag
question

A control chart will be established to monitor nonconformities per unit. Thirty samples are collected with sample size nine units. The total of the number of nonconformities is 180. Calculate the UCL of the appropriate control chart.

- ⦿ U chart, UCL = 1.4832
- ○ U chart, UCL = 2
- ○ c chart, UCL = 39
- ○ None
- ○ c chart, UCL = 14

Clear my choice

The control chart is established for monitoring the average number of nonconformities per unit. The average number of nonconformities per unit was 0.5. The inspection unit is redefined as 4 units. What will be the 3 sigma UCL to monitor this size inspection unit?

○ 7

○ 6

◉ 1.561

○ None

Clear my choice

Consider the following information:

Individual chart: Center line = 600

MR-chart: Center line = 4

The UCL of moving range control chart will be ------------

- ○ 14.744
- ○ 589.36
- ○ 0
- ◉ None
- ○ 610.64

Clear my choice

A process is being controlled with a fraction nonconforming control chart. The process average has been shown to be 0.1. Four-sigma control limits were used, and the procedure calls for taking daily samples of 100 items. The UCL of the equivalent and corresponding number nonconforming control chart will be ----

○ 22

○ -0.02

◉ 0.22

○ None

○ zero

Clear my choice

Question **1**

Complete

Mark 1.00 out
of 2.00

⚑ Flag
question

Please state whether each of the following statement is True/False. If false, please correct the false terms in the underlined text only.

1- **The x-bar and s charts are used to monitor** a process where automated inspection and measurement technology is used.

2- **There is a mathematical or statistical relationship** between the control limits and the specification limits.

1- False , **The x-bar and s charts are** used to monitor --> The Shewhart control chart

2- False , **There is a mathematical or statistical relationship**
There is no mathematical or statistical relationship

Thirty samples were collected; with variable sample sizes. A control chart for nonconformities per unit is to be established with two-sigma control limits. The sum of nonconformities was 90 and the sum of the sample sizes = 180. Using the average sample size, the UCL is ----------.

○ 0.0774

○ 1.0774

○ None

⦿ 1.366

○ 0.5

Clear my choice

The x-bar and R chart was used to monitor process. Twenty samples were collected each of sample size = 9. The estimated process mean and standard deviation are 111 and 2, respectively. Specification on the critical characteristic is USL= 118, target=112, LSL= 106. Then, the value of the appropriate capability index will be ------.

- ◉ 0.745356
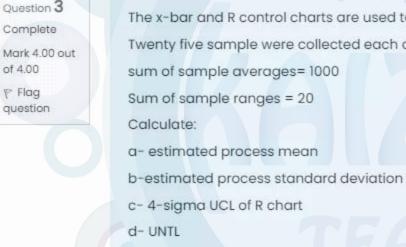- ○ 1
- ○ 0.894427
- ○ None

Clear my choice

Question **6**

Complete

Mark 0.00 out
of 2.00

P Flag
question

Please state whether each of the following statement is True/False. If false, please correct the false terms in the underlined text only.

1- A point plots outsides both the limits of the individual and moving range charts indicates **that the variability of the process is out of control.**

2- Stratification pattern is indicated w**hen the points in the control chart cluster around the center line**.

Question 11

Not yet
answered

Marked out of
2.50

⚐ Flag
question

The x-bar and s chart was used to monitor process. Twenty samples were collected each of sample size = 9. The standard values of the mean and standard deviation are 112 and 2, respectively. Specification on the critical characteristic is USL= 118, target=111, LSL= 106. Then, the appropriate capability index will be -----.

- ⦿ Cpkm
- ○ Cp
- ○ Cp
- ○ Cpm

Clear my choice

Please state whether each of the following statement is True/False. If false, please correct the false terms in the underlined text only.

1- **Specification limits are calculated**, for example by customers or designers.

2- When constructing the x-bar and R control charts, if the cost associated with **producing defective items is high, large, more frequent samples** are recommended.

The x-bar and R control charts are used to monitor the thickness of plastic bottle.

Twenty five sample were collected each of sample size =4. Given the following:

sum of sample averages= 1000

Sum of sample ranges = 20

Calculate:

a- estimated process mean

b-estimated process standard deviation

c- 4-sigma UCL of R chart

d- UNTL

A control chart for the fraction nonconforming is to be established by selecting twenty samples each with sample size of 40 units. The sum of nonconforming units = 96. Suppose that two points fell outside the control limits. The corresponding number of nonconforming was 2 and 4, respectively. Then the revised CL will be ----------------

○ 0.0474

◉ 0.125

○ 0.1184

○ 0.133333

○ None

Clear my choice

Question 1

Not yet answered

Marked out of 2.50

⚑ Flag question

The x-bar and s chart was used to monitor a new process. The standard values of the mean and standard deviation are 100 and 3, respectively. Specification on the critical characteristic is at most 118. Then, the minimum recommended capability value is -----.

○ None

○ 0.5

◉ 2

○ 1

○ 6

Clear my choice

The x-bar and s chart was used to monitor a new process. The standard values of the mean and standard deviation are 100 and 3, respectively. Specification on the critical characteristic is at most 118. Then, the minimum recommended capability value is -----.

- ○ None
- ○ 0.5
- ◉ 2
- ○ 1
- ○ 6

Clear my choice

The x-bar and R control charts are used to monitor the thickness of plastic bottle; specifications are at most 95.

Twenty sample were collected each of sample size =4. Given the following (standard values **are unknown**):

X-bar chart: CL= 100   UCL= 103

Calculate:

a- CL of the R chart

b- If the process mean shifts to 102 and the standard deviation becomes 4. Calculate the probability to detect the shift by the third sample.

c- out-of-control Average Run Length assuming the shift is detected by the 1st sample.

Question 6

Not yet
answered

Marked out of
2.50

⚑ Flag
question

Twenty five samples were collected each of unit. A control chart is constructed to monitor total number of nonconformities in an inspection unit of two units. The CL of the control chart was 8. Suppose that this chart will be used to monitor total number of nonconformities in one unit. The UCL of the appropriate control chart that is consistent with the established control chart is ----

○ None

○ 9

○ 13

○ 28

◉ 10

Clear my choice

Twenty samples were selected randomly, each sample consists of four items. The sum of total nonconformities = 80. Suppose that the inspection unit was defined as four items. The UCL for appropriate two-sigma control chart is -----------

○ 14

○ 28

◉ 8

○ 2

○ None

Clear my choice

Question **4**

Not yet
answered

Marked out of
2.50

⚑ Flag
question

The x-bar and S charts (standard values are known) are used to monitor weight (Specifications 100±9).
Twenty samples were collected (n =4). Given:

x-bar: CL = 101

s chart: CL = 9

The values of process standard deviation and mean are ------

O mean= 100, standard deviation = 9.788

O None

O mean= 101, standard deviation = 8.2917

⦿ mean= 101, standard deviation = 9.788

O mean= 100, standard deviation = 9

Clear my choice

Question 10

Not yet
answered

Marked out of
2.50

P Flag
question

When destructive testing (or other expensive testing procedures) is required, use ------------------ control charts.

○ a. attributes

○ b. I-MR

○ c. tier chart

◉ d. variables

Clear my choice

Question 5

Not answered

Marked out of
6.00

Flag
question

The x-bar and s control charts are used to monitor the thickness of plastic bottle; specifications are at most 95.

Twenty sample were collected each of sample size =9. Given the following (standard values **are known**):

X-bar chart: CL= 100

s chart: CL= 9

Calculate:

a- alpha risk

b- UCL of s chart

c- Fraction nonconforming

d- UCL of the corresponding s chart

The x-bar and s chart was used to monitor process. Twenty samples were collected each of sample size = 9. The standard values of the mean and standard deviation are 111 and 3, respectively. Specification on the critical characteristic is USL= 118 LSL= 106. Then, the value of the actual capability index will be -----.

○ 0.27778

○ None

○ 2

○ 1.5

◉ 0.55556

Clear my choice

The x-bar and R chart was used to monitor process. Twenty samples were collected each of sample size = 9. The estimated process mean and standard deviation are 112 and 2, respectively. Specification on the critical characteristic is USL= 118, target=111, LSL= 106. Then, the value of the appropriate capability index will be ------.

○ 1

◉ 0.894427

○ 0.745356

○ 0.83333

○ None

Clear my choice