

Unit 14 - Week 12

Course outline

How does an NPTEL online course work?

Week - 0

Week 1

Week 2

Week 3

Week 4

Week 5

Week 6

Week 7

Week 8

Week 9

Week 10

Week 11

Week 12

Lecture 56 : Robust Design and Taguchi Method

Lecture 57 : Robust Design and Taguchi Method (Contd.)

Lecture 58 : Robust Design and Taguchi Method (Contd.)

Lecture 59 : Robust Design and Taguchi Method (Contd.)

Lecture 60 : Robust Design and Taguchi Method (Contd.)

Week 12 : Lecture Material

Quiz : Assignment 12

Week 12 Feedback Form

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Assignment Detailed Solution

Books

Live Interactive Session

Assignment 12

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2020-04-22, 23:59 IST.

1) The main objective of parameter design is: 2 points

- (a) To propose an input-output model of system under consideration
- (b) To measure the effect of noise variables on the outputs of the systems under consideration
- (c) To identify the adjustment factor in the system
- (d) Effect of noise variables on responses to propose the values of the parameters

- a.
 b.
 c.
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

c.

2) The two important activities, product design and process design, are referred to as a part of 2 points

- (a) On-line Quality Control
- (b) Off-line Quality Control
- (c) Design optimization
- (d) None of the above

- a.
 b.
 c.
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

b.

3) Taguchi method (TM) is three-step method. The main step in TM is: 2 points

- (a) System Design
- (b) Parameter design
- (c) Tolerance design
- (d) All of the above

- a.
 b.
 c.
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

b.

4) Quality loss of a quality characteristic is proportional to its deviation of actual value from its target value. For single specification limit (lower) type quality characteristic, the loss is less if 2 points

- (a) Actual value is far away from the target
- (b) Actual value is very near to the target
- (c) The actual value is at the target
- (d) All of above

- a.
 b.
 c.
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

b.

5) To control and minimize quality loss related to a quality characteristic of a product, we need to minimize 2 points

- (a) Deviation of the average value of quality characteristic from the target
- (b) Variance in the values of the quality characteristic
- (c) Mean square deviation of the quality characteristic around its mean
- (d) Both (a) and (b)

- a.
 b.
 c.
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

d.

6) Traditional loss function is based on the assumption that 2 points

- (a) The quality characteristic is exactly at its target value
- (b) The societal loss is at the minimum level
- (c) There is no distinction between the value of the quality characteristic at above lower specification limit or below upper specification limit
- (d) None of above

- a.
 b.
 c.
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

c.

7) Manufacturing variation may cause performance variation of a product. This cause is known as 2 points

- (a) Unit-to-unit variation
- (b) Internal noise
- (c) External noise
- (d) Common cause of variation

- a.
 b.
 c.
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

b.

8) In Taguchi Method, the S/N ratio for a process is recommended as a measure for monitoring and controlling 2 points

- (a) Process mean
- (b) Process variance
- (c) Process performance
- (d) Societal loss

- a.
 b.
 c.
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

c.

9) Customer tolerance and manufacturing tolerance for a quality characteristic are related. If the value of quality characteristic is found to be within its manufacturing tolerance 2 points

- (a) Its manufacturing tolerance is greater than its customer tolerance
- (b) A corrective action in manufacturing is necessary
- (c) A corrective action in manufacturing is not necessary
- (d) There is no meaningful information available regarding quality characteristic

- a.
 b.
 c.
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

c.

10) In Taguchi Method, the value of S/N ratio for a quality characteristic under consideration increases when 2 points

- (a) Mean of quality characteristic increases and variance of quality characteristic decreases
- (b) Both mean and variance of quality characteristic increase
- (c) Variance of quality characteristic increases
- (d) Mean of quality characteristic increases

- a.
 b.
 c.
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

a.

11) In a manufacturing system, Taguchi Method is recommended specifically to design 2 points

- (a) A product with minimum flexibility
- (b) A product with assurance of robust performance even in adverse environment
- (c) A product with maximum flexibility and highest level of robustness
- (d) A product with adjustability in its quality characteristics

- a.
 b.
 c.
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

c.