

## Unit 8 - Week 6

## Course outline

How does an NPTEL online course work?

Week - 0

Week 1

Week 2

Week 3

Week 4

Week 5

Week 6

● Lecture 26: Process Capability Analysis

○ Lecture 27: Process Capability Analysis (Contd.)

○ Lecture 28: Process Capability Analysis (Contd.)

○ Lecture 29: Process Capability Analysis (Contd.)

○ Lecture 30: Process Capability Analysis (Contd.)

● Week 6 : Lecture Material

○ Quiz : Assignment 6

○ Week 6 Feedback Form

Week 7

Week 8

Week 9

Week 10

Week 11

Week 12

DOWNLOAD VIDEOS

Text Transcripts

Assignment Detailed Solution

Books

Live Interactive Session

## Assignment 6

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

Due on 2020-03-11, 23:59 IST.

1) An acceptable potential of a process is a necessary condition for the process to be capable. The process potential is measured by the index

2 points

- a. CPL
- b. CPU
- c.  $C_{pk}$
- d.  $C_p$

- a.
- b.
- c.
- d.

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
d.

2) The main objective of process capability analysis is:

2 points

- a. To ensure that the process is in statistical control
- b. To guarantee uniformity of acceptable output from the process
- c. To produce minimum number of rejects from the process
- d. To improve the design of the process

- a.
- b.
- c.
- d.

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
b.

3)  $C_{pm}$  index is recommended for measuring and assessing capability of a process with the assumption that

2 points

- a. Process spread is defined with respect to process mean
- b. Process variance is to be defined with reference to target value of the quality characteristic under consideration
- c. Target value of the quality characteristic under consideration is known
- d. All of the above

- a.
- b.
- c.
- d.

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
b.

4) In a process capability analysis, two types of study are to be carried out- product analysis and process analysis. Identify the correct statement among the four statements given below

2 points

- a. Process analysis is the ultimate objective
- b. Process analysis follows product analysis
- c. Process settings is one of the main purpose of process capability analysis
- d. All of the above

- a.
- b.
- c.
- d.

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
d.

5) Select the condition in which the value of  $C_{pk}$  index of a process may be zero:

2 points

- a. Process mean is at upper or lower tolerance limit of the quality characteristic under consideration
- b. Process mean at the nominal value of the quality characteristic under consideration
- c. Process mean lies between upper and lower specification limits of the quality characteristic under consideration
- d. Process mean is either greater than upper specification limit or lower than lower specification limit for the quality characteristic under consideration

- a.
- b.
- c.
- d.

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
a.

6) For measuring capability of a process, the relationship between the following parameters is to be known

2 points

- a. Specification spread and process spread
- b. Upper and lower specification limits
- c. Upper and lower natural tolerance limits
- d. All of the above

- a.
- b.
- c.
- d.

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
a.

7) Inherent variability of measured observations, in the context of measurement system capability analysis, consists of two components

2 points

- a. Variability of the process and variability of the measurement systems
- b. Variability of measuring devices and variability due to operators
- c. Variability of the process and variability due to operators
- d. Variations among operators and variations due to interaction between operators and parts

- a.
- b.
- c.
- d.

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
a.

8) Control chart information for a process helps in assessing the capability of a process in the sense that

2 points

- a. The process is known to have adequate potential
- b. It becomes easier to identify the relevant process parameters and their values
- c. It is possible to verify if the process is in statistical control
- d. Both  $C_{pk}$  and  $C_{pm}$  can be measured

- a.
- b.
- c.
- d.

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
c.

9) While process capability ratio is measured, a term called 'natural tolerance limits' is referred to. The natural tolerance limits are dependent on:

2 points

- a. The state of the process
- b. Design of the process
- c. Process control limits
- d. Process variance

- a.
- b.
- c.
- d.

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
d.

10) For an interference fit, the following condition is to be met

2 points

- a. Means of both shaft diameter and hole diameter must be same
- b. LNTL of hole >> UNTL of shaft
- c. UNTL of hole << LNTL of shaft
- d. There may be overlapping between shaft and hole diameters

- a.
- b.
- c.
- d.

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
c.