

**Aerospace Structures Pre-Laboratory**  
**Lab 9 Introduction to Nondestructive Evaluation**

Section 4 Group 2

Matthew Mehrrens

April 5, 2023

**AER E 322**

**Spring 2023**

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## Question 1

(4 points) *In a sentence or two, state your definition of NDE.*

**Solution:**

## Question 2

(3 points each) *Under what technology category (e.g. visual examination, chemical testing, etc.) is each of the three NDE techniques learned in this lab?*

**Solution:**

## Question 3

(5 points) *How does tap testing determine the local stiffness of the part under testing?* (3 points) *What is being measured?*

**Solution:**

## Question 4

(3 points each) *What are the three basic components in an ultrasonic immersion testing system?*

**Solution:**

## Question 5

(15 points) *For the ultrasonic immersion testing, you are instructed to follow a strategy of “sequential search”. Describe what this is and how it will be executed in the lab.*

**Solution:**

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## Question 6

(10 points each) *Describe what are A-, B- and C-scans in an ultrasonic testing?*

**Solution:**

## Question 7

(10 points) *From what you learn in lecture notes, how does eddy current testing work?*

**Solution:**

## Question 8

(10 points) *Why is eddy current testing useful for sorting out metallic materials?*

**Solution:**