**ES473 NEON Introduction to Lidar Video Review Questions (7 minute Video) Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

<https://www.youtube.com/watch?v=EYbhNSUnIdU>

Watch the video and answer the following questions. Draw sketches or include image cut-and-paste, where required.

1. What does the acronym “Lidar” stand for?
2. What types of electromagnetic radiation is used in Lidar analysis?
3. What are the three primary methods for collecting Lidar Data?
4. What are the 4 parts of the Lidar Data Collection System?
5. What part of the EM spectrum is used for Lidar data collection?
6. What does an inertial measurement system used for? Why is this an important part of the Lidar system?
7. True or False: computers are essential to collect Lidar data.
8. Define the following term terms:

“pulse”

“return”

1. How does the Lidar system actually determine Earth’s surface elevation and distance from the aircraft.
2. Write the equation for the distance to determine ground elevation. Label all variables. Draw a sketch to support your answer.
3. Draw a sketch showing the concepts of Yaw, Roll and Pitch with aircraft motion.
4. What is the Nadir of a Lidar pulse? Where is it located relative to the plane and pulse generator.
5. How do Lidar laser pulses reflect off of the Earth’ surface? Describe the difference between first return and last returns? Draw a sketch to support your answer
6. How is Lidar used to analyze forest canopy?
7. True or False: Lidar is an interesting technology.