**ES473 UW Lidar Video Review Questions (23 minute video) Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

<https://www.youtube.com/watch?v=Z75zGf7_OpI>

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

1. What is the basic definition of LiDAR?
2. How many elevation data points are being collected every second by the laser scanner? What is an X, Y, Z data set? How many elevation measurements can be made per sq. mile using Lidar?
3. Draw and label a sketch showing the basic components of a Lidar data collection system; and the basic methodology.
4. What is a “Point Cloud”? Draw a sketch.
5. What percentage of Lidar measurements interact and map with forest canopy in western Washington?
6. What do geomorphologists and geologists use Lidar technology for? What is the problem with forest canopy using Lidar if using the technology to student Earth surface processes?
7. What is the approximate cost of using Lidar surveying technology per square mile?
8. What is the elevation accuracy and resolution with Lidar? What is the horizontal position accuracy (answer in centimeters).
9. What is a “bare earth” DEM? How is it derived?
10. What does the acronym “ALSM” stand for?
11. Provide three world examples of applications that Lidar have been used for by scientists.
12. What is meant by “first return” and “last return” with respect to laser reflection travel time.
13. What is the difference between remote sensing imagery and Lidar?
14. How is lidar used in topographic analysis of the landscape? Why is it important to geoscientists.