Applied Remote Sensing Training (ARSET) Program

Remote Sensing for Disasters Scenarios (2019)

Homework Questions

Question 1

Consider two examples of potential problems to address before, during, or after an earthquake.

Answer (open ended):

Question 2

2. According to a 2018 report by the United Nations Office for Disaster Risk Reduction (UNISDR) and the Centre for Research on the Epidemiology of Disasters (CRED), earthquakes were the third most common disaster, but responsible for the majority of deaths (56%): https://www.unisdr.org/2016/iddr/IDDR2018_Economic%20Losses.pdf.

Answers: (bold correct)

a. True
b. False

Question 3

What is the name of the NASA JPL project that uses Interferometric Synthetic Aperture Radar (InSAR) and Differential Global Positioning Systems (DGPS) to provide imagery to respond to natural disasters?

Answers: (bold correct)

a. SAR-GPS
b. ARIA
c. RAPIDO
d. FAST

Feedback:
Camera traps, telemetry, and direct observations are all ways to collect data.

Question 4

On a disaster-by-disaster basis, the ARIA team creates a map that indicates significant ground surface change. Preliminary validation is usually done by comparing SAR images and what satellite imagery?

Answers: (bold correct)

a. SAR
b. LiDAR
c. Optical
d. None of the above

Question 5

Landslides can be triggered by which of the following?

Answers: (bold correct)

a. Rainfall
b. Earthquakes
c. Mining
d. All of the above

Question 6

Precipitation is the most common trigger of landslides.

Answers: (bold correct)

a. True
b. False

Question 7

Go to the NASA Disasters homepage: https://disasters.nasa.gov/home. Click on some of the links under the "Explore by Disaster Type", "Landslides" menu option to learn more about these events and which satellite data were used to assess them. List 3 of the landslide events found on this webpage:

Answer (open ended):

Question 8

The Landslide Hazard Assessment for Situational Awareness (LHASA) is a tool that provides forecasts of the current risks of landslides by comparing precipitation data from the last seven days with long-term precipitation data. In places where precipitation is unusually high, the susceptibility of the terrain is evaluated, which includes information on the presence of roads; if the trees have been cut down or burned; if there is a nearby tectonic fault; if the local bedrock is weak or if the slopes are steep.

Answers: (bold correct)

a. **True**
b. False

Question 9

Describe how you might use remote sensing for your work in landslides and earthquakes.

Answer (open ended):