



Applied Remote Sensing Training (ARSET) Program

Monitoring Urban Floods Using Remote Sensing (2018)

Homework Questions

Question 1

Which of the following data are useful for monitoring urban flooding?

Answers: (bold correct)

- a. Precipitation rate
- b. Accumulated Precipitation
- c. Terrain and Slope
- d. Storm Water System Capacity
- e. **All of the above**

Question 2

GPM IMERG data provides rainfall at this resolution:

Answers: (bold correct)

- a. 3-hourly, $0.25^\circ \times 0.25^\circ$
- b. 1-hourly, $1^\circ \times 1^\circ$
- c. **$\frac{1}{2}$ -hourly, $0.1^\circ \times 0.1^\circ$**

Question 3

True or false: SRTM elevation data are only available over the U.S.

Answers: (bold correct)

- a. True
- b. **False**

Question 4

This is the highest spatial resolution that Landsat-based Global Impervious Surface data can be downloaded at:

Answers: (bold correct)

- a. **30x30 m**
- b. 10x10 m
- c. 250x250 m

Question 5

True or false: SRTM elevation data can be easily downloaded by using the Giovanni tool.

Answers: (bold correct)

- a. True
- b. **False**

Question 6

True or false: MODIS flood maps have a higher spatial resolution than GFMS flood maps.

Answers: (bold correct)

- a. **True**
- b. False

Question 7

True or false: MODIS flood maps have a higher temporal resolution than GFMS flood maps.

Answers: (bold correct)

- a. True
- b. **False**

Question 8

True or false: Landsat GMIS and SRTM elevation are available in near real-time.

Answers: (bold correct)

- a. True
- b. **False**

Question 9

True or false: GEOS-5 provides weather and forecast data.

Answers: (bold correct)

- a. True
- b. **False**

Question 10

This sensor has day and night bands that can help monitor power outages:

Answers: (bold correct)

- a. MODIS
- b. VIIRS**
- c. OLI

Question 11

True or false: soil moisture information is not relevant for urban flooding.

Answers: (bold correct)

- a. True
- b. False**

Question 12

One major advantage of SAR is that:

Answers: (bold correct)

- a. It provides near real time data coverage-173 to 152 m
- b. It can see through clouds**
- c. It is easy to detect urban flooding using SAR
- d. All of the above

Question 13

True or false: LIDAR is an active remote sensing instrument.

Answers: (bold correct)

- a. True**
- b. False

Question 14

True or false: LIDAR can provide this information for urban flood management:

Answers: (bold correct)

- a. Digital elevation and terrain**
- b. Soil moisture
- c. Flood intensity

Question 15

True or false: once we start using remote sensing data there is no need for on-site measurements in urban areas.

Answers: (bold correct)

- a. True
- b. False**