NASA Remote Sensing Observations for Flood Management 2015
Homework Assignment

1. GPM provides global coverage of rainfall.

   a) True b) False

2. MODIS provides rainfall observations.

   a) True b) False

3. IMERG provides rainfall data products every half hour because GPM is in geostationary orbit.

   a) True b) False

4. TMPA and IMERG do not provide rainfall at the same spatial resolution.

   a) True b) False

5. Can the MODIS near real-time flood mapping tool be used to monitor streamflow?

   a) Yes b) No

6. Which of the following flood monitoring tools use TRMM/GPM/GCOM-W radiometer data to provide river discharge?

   a) Dartmouth Flood Observatory (DFO)
   b) MODIS NRT Global Flood Mapping
   c) TRMM Current Heavy Rain, Flood and Landslide Estimates

7. The Global Flood Monitoring System provides GIS-based interface for flood monitoring.

   a) True b) False

8. The Global Flood Monitoring System provides flood intensity in terms of:

   a) Streamflow b) Threshold Depth c) Accumulated Rain

9. MODIS is flying on these two satellites:

   a) Aqua and Terra

b) Aqua and TRMM
c) Aqua and GPM

10. Which MODIS inundation tool's data product is available as a GeoTIFF and will display in GIS in raster format?

    a) MODIS Flood Map (MFM)
    b) MODIS Surface Water (MSW)
    c) MODIS Water Product (MWP)
    d) MODIS Flood Water (MFW)

11. The Global Flood Detection System (GFDS) uses the MODIS flood mapping tool.

    a) True b) False

12. TRMM and GPM have the same sensors to observe rainfall.

    a) True b) False

13. What are the units of streamflow in the Global Flood Monitoring System?

14. This Tool provides flood alerts based on global forecast model:

    a) GFMS
    b) Extreme Rainfall Detection
    c) MODIS NRT

15. The CREST hydrological model is used for streamflow estimates by:

    a) GDACS/GFDS
    b) SERVIR
    c) GFMS

16. These observational quantities from MODIS are used for inundation mapping over previously dry land:

    a) Radar Reflectivity
    b) Spectral Reflectance
    c) Brightness temperature

17. The MOIDS NRT tool may not be used for inundation mapping in stormy weather, even if there is inundation occurring at the surface. Why?

18. Go to http://floodobservatory.colorado.edu and note the areas where flooding conditions are found in the 'current flood' map.

19. List two data portals where you can obtain SRTM data?

20. MODIS inundation data can be acquired through the NRT Global Flood Mapping site (http://oas.gsfc.nasa.gov/floodmap). List two data formats that can be obtained for the MODIS Flood Water (MFW) product.

21. If you are in charge of a dam operation on a river, how do you use GFMS operationally to plan for water release? For providing downstream alerts?

22. How can MODIS NRT be used for planning post-flood relief operations?