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Paper Id: 900045 Roll No.

B TECH
(SEM-IV) THEORY EXAMINATION 2018-19
GEOINFORMATICS

Time: 3 Hours *Total Marks: 70*

Note: **1.** Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. **Attempt *all* questions in brief.** **2 x 7 = 14**

a) Define (i) Crab (ii) Drift
b) Define Stefan-Boltzmann law
c) Distinguish between satellite remote sensing & microwave remote sensing.
d) What are Thematic Maps?
e) Define cylindrical projection.
f) Define Image filtering
g) What is meant by undershoot and overshoot?

SECTION B

2. **Attempt any *three* of the following:** **7 x 3 = 21**

a) A section line A B appears to be 10.16cm on a photograph for which the focal length is 16cm. the corresponding line measures 2.54cm on a map which is to a scale 1/50000. The terrain has an average elevation of 200m above mean sea level .calculate the flying altitude of the aircraft, above mean sea level when the photograph was taken.
b) Describe the electromagnetic spectrum with neat sketch for remote sensing data.
c) Write a note on image enhancement techniques.
d) What are the components of GIS? Explain.
e) Explain static, kinematic and differential GPS.

SECTION C

3. **Attempt any *one* part of the following:** **7 x 1 = 7**

a) What is tilt distortion? Prove that, in a tilted photograph, tilt distortion Is radial from the isocentre.
b) Vertical photograph where taken from height of 3048m, the focal length of the camera lens being 15.24cm. if the prints were 22.86*22.86cm and the overlap 60%, what was the length of the airbase?what would be the scale of the print?

4. **Attempt any *one* part of the following:** **7 x 1 = 7**

a) Explain the components of real Remote sensing System.
b) Explain energy interaction with earth surface materials.

5. **Attempt any *one* part of the following:** **7 x 1 = 7**

a) Explain the process of principal component transformation and Fourier transform approaches to image enhancement and analysis.
b) Write a note on supervised and unsupervised classification of remote sensed data.

6. **Attempt any *one* part of the following:** **7 x 1 = 7**

a) How will you improve highway planning with the help of GIS? Explain.
b) Give a detailed account an overlay analysis in GIS.

7. **Attempt any *one* part of the following:** **7 x 1 = 7**

a) Explain in detail about UTM projection System.
b) Write a note on GNSS and the advantages of GPS?