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**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?