

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 0022

Roll No.

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B.Tech.

(SEM IV) EVEN SEMESTER THEORY EXAMINATION,
2009-2010

GEOINFORMATICS

Time : 3 Hours

Total Marks : 100

Note : (i) Attempt **ALL** the questions.

(ii) All questions carry *equal* marks.

(iii) Be precise in your answers.

1. Attempt **any two** parts of the following : (2x10=20)

- (a) Explain what is relief displacement and how is it calculated ? The distance from the principal point to an image on a photograph is 6.44 cm and the elevation of the object above datum is 250 m. What is the relief displacement of the point if datum scale is 1 : 10000 and focal length is 20 cm ?
- (b) What are the elements of air photo interpretation? With a suitable example, explain the importance of Association in interpretation of photographs.
- (c) Describe with a neat sketch :
 - (i) Parallax bar
 - (ii) Mirror stereoscope

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2. Attempt **any two** parts of the following : (2x10=20)

- (a) What are the characteristics of real remote sensing systems? How do they differ from the ideal requirements?
- (b) Explain the general process involved in electromagnetic remote sensing. Differentiate between active and passive remote sensing systems. Under what conditions which are preferable?
- (c) What are essential differences between a raw, standard and a geocoded imagery? Which are most suitable in terms of geometric quality?

3. Attempt **any two** parts of the following : (2x10=20)

- (a) Differentiate between restoration and enhancement of remote sensing images. List any four image enhancing operations and explain any one of them.
- (b) What is land use map of an area? How it can be prepared with the use of remote sensing?
- (c) What are temporal images? Why these are used in remote sensing? Explain with a suitable example, which cannot be carried out without the use of temporal images.

4. Attempt **any two** parts of the following : (2x10=20)

- (a) What do you understand by spatial data? How is the spatial relationship represented?
- (b) What is an information system? State reasons to support that a map is an information system.

- (c) What are the important functions in a GIS? Explain buffering with suitable examples in context to vector data.

5. Attempt **any two** parts of the following : (2x10=20)

- (a) What do you understand by GPS? Identify its 3 segments and explain the purpose of each.
- (b) How many satellites must be visible in order to determine 3-D positions correctly? Discuss how the distance from the satellite to the GPS receiver is determined with a suitable sketch.
- (c) Describe the following :
- (i) Kinematic GPS
 - (ii) Dilution of precision

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