Printed Pages: 02 **SubCode: NCE402**

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B.TECH
(SEM IV) THEORY EXAMINATION 2017-18
GEOINFOEMATICS

Time: 3 Hours ***Total Marks: 100***

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

SECTION A

1. Attempt *all* questions in brief. 2 x 10 = 20

a. Define principal point.
b. Describe isocenter.
c. What is parallax bar?
d. What do you mean by scaling of photograph?
e. Explain meaning of GIS.
f. How will you eliminate error in photography?
g. What do you mean by geo coded imagery?
h. How will you create models in GIS?
i. Explain digitization of data.
j. What do you mean by geo referencing?

SECTION B

2. Attempt any *three* of the following: 10 x 3 = 30

a. What are essential differences between a raw, standard and a geocoded imagery? Which are most suitable in terms of geometric quality?
b. What are the characteristics of ideal remote sensing systems? How do the real remote sensing systems differ from the ideal requirements?
c. Describe the construction and working of a parallax bar with the help of a neat sketch.
d. What do you understand by stereopairs? Vertical photographs were taken from height of 3048 m, the focal length of the camera lens being 15.24 cm. If prints were 22.86 × 22.86 cms and the overlap is 60% what is the length of airbase and what is the scale of photograph?
e. Explain atmospheric window and multi spectral scanner.

SECTION C

3. Attempt any *one* part of the following: 10 x 1 = 10

(a) Differentiate between restoration and enhancement of remote sensing images. List any four image enhancing operations and explain any one of them
(b) 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 *one* part of the following: 10 x 1 = 10

(a) Describe various data formats of satellite images.

(b) What is a data model? Explain the data models used in a GIS. Differentiate between the object based and field based data models.

5. Attempt any *one* part of the following: 10 x 1 = 10

(a) Explain the process of overlay analysis in the case of raster data with a suitable example

(b) What is the difference between logical and arithmetic overlay?

6. Attempt any *one* part of the following: 10 x 1 = 10

(a) What do you understand by GIS? Enlist and explain various components of GIS.

(b) What is the basic principle of position determination with GPS?

7. Attempt any *one* part of the following: 10 x 1 = 10

(a) What are the sources of errors in GPS? List and explain in brief how the errors can be minimized with the help of differential GPS.

(b) Describe kinematic and differential GPS.