Printed Pages: 01 **Sub Code:NCE402/ECE402/CE402**

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

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. What do you mean by tilted photograph?
b. What do you mean by overlapping?
c. What do you mean by remote sensing?
d. Explain parallax in GPS.
e. Explain scaling of photograph.
f. What do you understand by aerial survey?
g. Give two advantages of image enhancement.
h. What do you mean by georeferncing of data?
i. Differentiate between aerial and land survey.
j. Explain the importance of digitization.

SECTION B

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

a. Differentiate between vertical, tilted and oblique photographs.
b. Why overlapping is required in aerial photography? Also explain crab and drift
c. A line PQ appears to be 10.16 cm on a photograph for which the focal length is 16 cm. The corresponding line measures 2.54 cm on a map which is to a scale 1/50,000. The terrain has an average elevation of 200 m above msl. Calculate the flying altitude of the aircraft above mean sea level
d. Explain the working of mirror stereoscope.
e. The scale of an aerial photograph is 1 cm = 160 m and the size of photograph is 20 cm × 20 cm. If the longitudinal lap is 65% and side lap is 35%, determine the number of photographs, required to cover an area 348 sq km.

SECTION C

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

(a) Establish parallax equation for determining elevation of a point from a stereopair.
(b) Explain various applications of GPS. Explain clearly use of GPS in land use classification.

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

(a) Describe differential GPS and its advantages.
(b) What is Global Positioning System? Describe the principle of its working.

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

(a) Define GIS and its components.
(b) List important functions of GIS and explain any one in detail.

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

(a) Explain raster data model and vector data model.
(b) What do you mean by preprocessing of remote sensing data? Explain in detail.

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

(a) Explain various interactions of incident EM energy with the atmosphere and earth surface.
(b) What do you understand by electromagnetic spectrum? State the wave length regions along with their uses for remote sensing applications.