Printed Pages: 02 **Sub Code:KCE058**

Paper Id: 231655 **Roll No.**

B.TECH.
(SEM V) THEORY EXAMINATION 2022-23
GIS AND ADVANCE REMOTE SENSING

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

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

SECTION A

1. Attempt *all* questions in brief. 2x10 = 20

(a) Differentiate between vertical photograph and aerial photograph.
(b) Define the term stereoscopic parallax.
(c) State the difference between active and passive remote sensors.
(d) Explain the term radiometric resolution?
(e) State the applications of GIS.
(f) State the importance of Geo-referencing?
(g) List out the 3 basic spatial entities in GIS particularly used for representation of vector data?
(h) Explain the term raster data model.
(i) Describe the term 'Digitization'?
(j) State the importance of Metadata?

SECTION B

2. Attempt any *three* of the following: 10x3 = 30

(a) An aerial photograph is taken from a flight at a height of 3.5 km above M.S.L. using a camera of focal length 152 mm. If the average ground elevation is 460m above the MSL, calculate the scale of photograph.
(b) Explain in detail the process of height measurement by parallax measurement using fiducial line.
(c) Describe the various atmospheric windows that finds applications in remote sensing?
(d) Explain the different components of GIS in detail.
(e) Explain the concept of object based data model and field based data model.

SECTION C

3. Attempt any *one* part of the following: 10x1 = 10

(a) Formulate an expression to calculate height of an object from relief displacement for a vertical photograph.
(b) Differentiate between the various types of aerial photographs with a neat sketches.

4. Attempt any *one* part of the following: 10x1 = 10

(a) Explainthe various advantages and limitations of Remote Sensing.
(b) Describe the important observations that can be drawn out of spectral reflectance curves for vegetation using a neat sketch.

5. Attempt any *one* part of the following: 10x1 = 10

(a) Describe in detail the spatial data and attribute data and the process to join both of the data types.

(b) Explain the various types of map projection systems along with neat sketch.

6. Attempt any *one* part of the following: 10x1 = 10

(a) Describe the geobased data model and describe the process of geometric representation of spatial features.

(b) Explain the process of representation of topology using vector data model.

7. Attempt any *one* part of the following: 10x1 = 10

(a) Describe the various methods used for data input for a raster data model.

(b) Explain the various elements of Raster data model.