

**P.G. Semester-II Examination, 2023****GEO-INFORMATICS****Course ID : 23151****Course Code : GI201T****Course Title : Photogrammetry and Digital Image Processing**

Time : 2 Hours

Full Marks : 40

*The figures in the right-hand margin indicate marks.**Candidates are required to give their answers in their own words as far as practicable.*Answer any **four** questions selecting at least **one** from each Unit.**UNIT-1****(Basics of Photogrammetry)**

1. Distinguish between relief displacement and image parallax. A rectangular agricultural field measures 8.55cm long, 5.13cm width on a vertical photograph having a scale of 1:20000. Find the area of the field at ground level. 4+6=10
2. What do you mean by photographic scale? Show the relation between camera focal length and image scale along with diagram. What are end lap and side lap? 2+5+3=10

**UNIT-2****(Pre-processing and Enhancement)**

3. Write a note on Histogram Equalization explaining its working principle, computation steps, advantages and disadvantages. 5+5=10
4. What do you mean by image rectification? What are the different types of image rectification? and describe each of them. 2+2+6=10

**UNIT-3****(Image Transformation and Processing)**

5. What do you mean by spectral ratioing? What are the advantages of doing spectral ratioing? Define the following terms: Normalized Difference Vegetation Index (NDVI), Normalized Difference Water Index (NDWI), Soil Adjusted Vegetation Index (SAVI). 2+2+6=10
6. What are the different types of arithmetic image operation? Describe each type. What is Fourier Transform? Describe the steps of Fourier Transform on image processing. 4+2+4=10