

M. SC. (GEOINFORMATICS)
(MSCGEO)

Term-End Examination

June, 2025

**MGY-010 : COMPUTER PROGRAMMING FOR
DIGITAL IMAGE PROCESSING AND GIS**

Time : 3 Hours

Maximum Marks : 75

Note : (i) *All questions are compulsory.*

(ii) *Marks for each question are indicated against it.*

(iii) *Draw well-labelled diagrams, wherever necessary.*

1. Answer any *two* of the following : $2 \times 15 = 30$

- (a) Give an account of thematic information extraction from raster data using Google Earth Engine.

- (b) Describe in detail the use of 'R' in image transformation giving suitable examples.
 - (c) Explain the use of 'R' in spatial and geometric operations.
 - (d) Discuss the use of Python in spatial data processing and analysis.
2. Answer any *two* of the following : $2 \times 10 = 20$
- (a) Give an account of GIS processing using GEE giving suitable examples.
 - (b) Write about the use of 'R' in image preprocessing giving suitable examples.
 - (c) Discuss the use of 'R' in vector data handling and visualisation giving appropriate examples.
 - (d) Describe web mapping and development giving suitable examples.
3. Write short notes on any *five* of the following : $5 \times 5 = 25$
- (a) Visualising time series data using GEE

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- (b) Image classification using 'R'
- (c) Creating and visualising histogram using 'R'
- (d) Data plotting using 'R'
- (e) Usage and importance of postgresQL
- (f) Python in GIS programming and customisation
- (g) Python and its major libraries
- (h) GEE and its importance in geoinformatics.

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