No. of Printed Pages : 4 **MGYL–008(Set-II)**

M. SC. (GEOINFORMATICS)/POST GRADUATE DIPLOMA IN GEOINFORMATICS (MSCGI/PGDGI)

Term-End Practical Examination

June, 2025

MGYL-008(Set-II) : DIGITAL IMAGE PROCESSING AND SPATIAL ANALYSIS LABORATORY

Time : 3 Hours *Maximum Marks : 30*

Note : *(i) All questions are compulsory. Marks are indicated against each question.*

(ii) Evaluation would be done under three parameters (i.e., performance, result / output and viva-voce).

(iii) The data to be used in the examination are provided by your exam centre in the computer allotted to you.

(iv) The data to be used for the examination are in the folders named as A, B, C, ... which are mentioned in the question paper as (A), (B), (C), ... , respectively.

(v) Keep all the soft copy results/outputs appropriately in the computer in a folder with your enrollment number. Other answers are to be written in the answer-sheet provided to you.

(vi) Incomplete and illegible results/ outputs will not be evaluated.

1. (a) Mosaic the given dataset (B) and create a colour composite from it. 1

(b) From the output generated as a part of the answer to question 1(a), generate an unsupervised classified image having at least 5 land use and land cover classes. Recode the classified output. 2+2

(c) Apply majority and minority filters of 3 × 3 window sizes on the classified image. Write the effect of applying the filters in your answer-sheet. Prepare a map showing the colour composite, recoded classified image and the two outputs after applying the filters. 2+2+2

(d) Write 'R' pseudocode in your answer-sheet for creating a NDVI image from the given dataset (B). 2

(e) Create an Enhanced Vegetation Index (EVI) image from the dataset (B). Prepare a map showing SFCC and the EVI image. 1+2

(f) Create a buffer of approximately 10 km around Ranchi from the data (C). 2

(g) Extract the boundary of Australia from the data (E) using dissolve and clip operations. 2

(f) Derive contours (of 90 m interval) from the given data (A). Prepare a map showing the input DEM in pseudocolour and the derived contours. Also create spatial profile from the DEM and write its interpretation. 1+2+2

2. Viva-voce. 5

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