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

Term-End Practical Examination

June, 2026

MGYL-008(Set-I) : 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) Derive slope and aspect from the given data (A). Prepare a map showing the input DEM and the two derivatives visualized in pseudocolour. 2+2

   (b) Create a False Colour Composite (FCC) from the given dataset (B). From the FCC, generate spectral profiles of at least *four* land cover/land use classes in a single plot. 2+2

(c) Generate an unsupervised classified image using ISODATA clustering having 4 land use land cover classes using SAGA software from the colour composite. Also perform unsupervised classification using R applying k-means clustering. Make a comparison of the two outputs. 2+2+1

(d) Create a buffer of approximately 10 km around Bhopal from the data (C). Find shortest path between Ratlam and Jhansi. 2+2

(e) From the given data (F), create a DEM and visualise the DEM in 3D with Bing Aerial Imagery draped over it. 4+2

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

2. Viva-voce. 5

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